XR-U220/U330/U331
XR-U440RDS/U441RDS

SERVICE MANUAL

US Model
Canadian Model
XR-U220/U330
AEP Model
XR-U330/U331/U440RDS/U441RDS
Germany Model
XR-U440RDS
E Model
XR-U330

SONY
XR-U220
DIR
20W x 4
RELEASE
DSPL
M.SCAN
BTM
INTRO
REPEAT
SHUF
BANK
AM
SEEK
TRACK
PRESET

Photo: XR-U220

Model Name Using Similar Mechanism	XR-7130/7140/7142/7600
Tape Transport Mechanism Type	MG-38ZS/38ZS1

SPECIFICATIONS

Power amplifier section

Outputs	Speaker outputs (sure seal connectors)
Speaker impedance	3.2 – 8 ohms
Maximum power output	20 W × 4 (at 4 ohms)* * Measured at 14.4 V

Cassette player section

Tape track	4-track 2-channel stereo
Frequency response	30 – 18,000 Hz

Signal-to-noise ratio

Cassette type	Dolby B NR on	Dolby NR off
TYPE II, IV	66 dB	58 dB
TYPE I	63 dB	55 dB

Wow and flutter	0.13% (WRMS)

Tuner section

FM

Tuning range	XR-U220/U330 US, Canadian model 87.5 – 107.9 MHz XR-U330/U440RDS/U441RDS 87.5 – 108.0 MHz
Antenna terminal	External antenna connector
Intermediate frequency	10.7 MHz
Usable sensitivity	12 dBf (75 ohms)
Selectivity	75 dB at 400 kHz
Signal-to-noise ratio	65 dB (stereo), 70 dB (mono)
Harmonic distortion at 1 kHz	0.5% (stereo), 0.3% (mono)
Separation	35 dB at 1 kHz
Frequency response	30 – 15,000 Hz
Capture ratio	2 dB

AM (MW/LW)

Tuning range	XR-U220/U330 US, Canadian model 530 – 1,710 kHz XR-U330: European and other countries 531 – 1,602 kHz (at 9 kHz step) North and South American countries 530 – 1,620 kHz (at 10 kHz step) AM tuning interval 9 kHz/10 kHz switchable (except the model for European countries) XR-U440RDS 531 – 1,602 kHz XR-U331/U441RDS MW: 531 – 1,602 kHz LW: 153 – 281 kHz

– Continued on next page –

MICROFILM

FM/AM CASSETTE CAR STEREO
XR-U220/U330/U440RDS
FM/MW/LW CASSETTE CAR STEREO
XR-U331/U441RDS

SONY®

Antenna terminal	External antenna connector
Intermediate frequency	450 kHz
Sensitivity	XR-U220/U330/U440RDS 35 µV XR-U331/U441RDS MW: 35 µV LW: 70 µV

General

Output lead	Power antenna relay control lead Power amplifier control lead
Tone controls	Bass ±10 dB at 100 Hz Treble ±10 dB at 10 kHz
Loudness	+6 dB at 100 Hz +6 dB at 10 kHz
Power requirements	12 V DC car battery (negative ground)
Dimensions	Approx. 186 × 57 × 174 mm (w/h/d), not incl. projecting parts and controls
Mounting dimensions	Approx. 182 × 53 × 154 mm (w/h/d), not incl. projecting parts and controls
Weight	Approx. 1.4 kg
Accessories supplied	Mounting hardware (1 set) Power connecting cord (1) Front panel case (1)

Design and specifications subject to change without notice.

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SECTION 1
GENERAL

This section is extracted from XR-U330/U331 instruction manual.

Installation

Precautions

- Choose the mounting location carefully so that the unit will not interfere with the normal driving functions of the driver.
- Avoid installing the unit where it would be subject to high temperatures, such as from direct sunlight or hot air from the heater, or where it would be subject to dust, dirt or excessive vibration.
- Use only the supplied mounting hardware for a safe and secure installation.
- Before installing the unit, detach the front panel.

Mounting angle adjustment
Adjust the mounting angle to less than 20°.

Installation

Précautions

- Choisir soigneusement l'emplacement du montage, de manière que l'appareil ne gêne nullement les mouvements du conducteur.
- Eviter d'installer l'appareil là où il serait exposé à des températures élevées, comme en plein soleil ou à proximité d'une bouche d'air chaud, à de la poussière, de la saleté ou des vibrations violentes.
- Pour garantir un montage sûr, n'utiliser que le matériel fourni.
- Avant d'installer l'appareil, déposer le panneau avant.

Réglage de l'angle de montage
Ajuster l'inclinaison à un angle inférieur à 20°

Instalación

Precauciones

- Elija cuidadosamente el lugar de montaje de forma que la unidad no interfiera las funciones normales de conducción.
- Evite instalar la unidad donde pueda quedar sometida a altas temperaturas, como a la luz solar directa o al aire caliente de calefacción, o a polvo, suciedad, o vibraciones excesivas.
- Para realizar una instalación segura y firme, emplee solamente la ferretería de montaje suministrada.
- Antes de instalar la unidad, extraiga el panel frontal.

Ajuste del ángulo de montaje
Ajuste el ángulo de montaje a menos de 20°.

Montage

Voorzorgsmaatregelen

- Kies de plaats voor inbouw zorgvuldig en houd er rekening mee dat het apparaat de bestuurder van de auto vooral niet in de weg mag zitten.
- Monteer het apparaat niet op plaatsen waar het blootgesteld wordt aan hoge temperaturen zoals van direkt zonlicht of de warme luchtstroom van de autoverwarming. Zorg dat het niet blootstaat aan sterke trillingen of in kontakt komt met veel stof of vuil.
- Gebruik voor het veilig en stevig monteren van het apparaat uitsluitend de bijgeleverde montage-onderdelen.
- Voor het installeren van het apparaat dient u eerst het voorpaneel hiervan te verwijderen.

Inbouwhoek
Monteer het apparaat in een stand die niet meer dan 20° afwijkt van het horizontale vlak.

摆放位置

使用前须知事项

- 本机请放在不妨碍司机驾驶之处。
- 避免把本机放在高温之处、如阳光直射、暖气机前，或灰尘极多、脏乱或易受震动等地方。
- 为了安全起见，安装时请使用附属的安装道具。
- 开始安装以前，请先拆下前板。

安装角度之调整
请在20度以内调整安装角度

How to Detach and Attach the Front Panel

To detach
Press the RELEASE button to open up the front panel, then pull it out.

To attach
Align the part (A) and (B), and push the front panel until it clicks.

Dépose et fixation du panneau avant

Dépose
Appuyer sur la touche RELEASE pour ouvrir le panneau avant, puis le retirer.

Fixation
Aligner les points (A) et (B), puis pousser sur le panneau jusqu'au déclic.

Forma de extraer e instalar el panel frontal

Para extraerlo
Presione la tecla RELEASE a fin de abrir el panel frontal, y tire de él hacia afuera.

Para instalarlo
Alinee las partes (A) y (B) y presione el panel frontal hasta que chasquee.

Verwijderen en weer aanbrengen van het voorpaneel

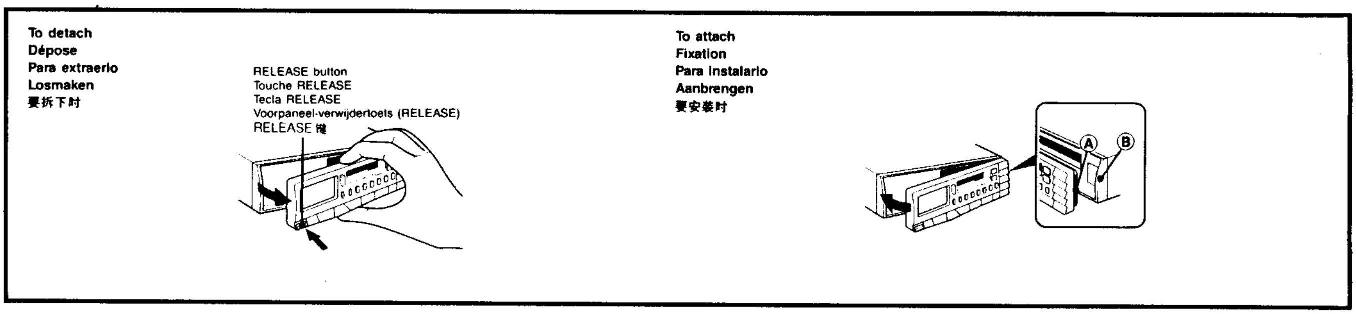
Losmaken
Druk op de voorpaneel-verwijdertoets (RELEASE) zodat het paneel naar voren springt en trek het vervolgens los.

Aanbrengen
Houd de onderdelen (A) en (B) recht tegenover elkaar, en druk het paneel tegen het apparaat tot het op zijn plaats vastklikt.

前板之装卸

要拆除前板时
按压RELEASE键以打开前板，并向外拉出，即可取下。

要安装前板时
对齐(A)及(B)点，然后把前板向内压入直至听到"咯勒"声响。



Mounting Example

Installation in the dashboard

Exemple de montage

Encastrement dans le tableau de bord

Ejemplo de montaje

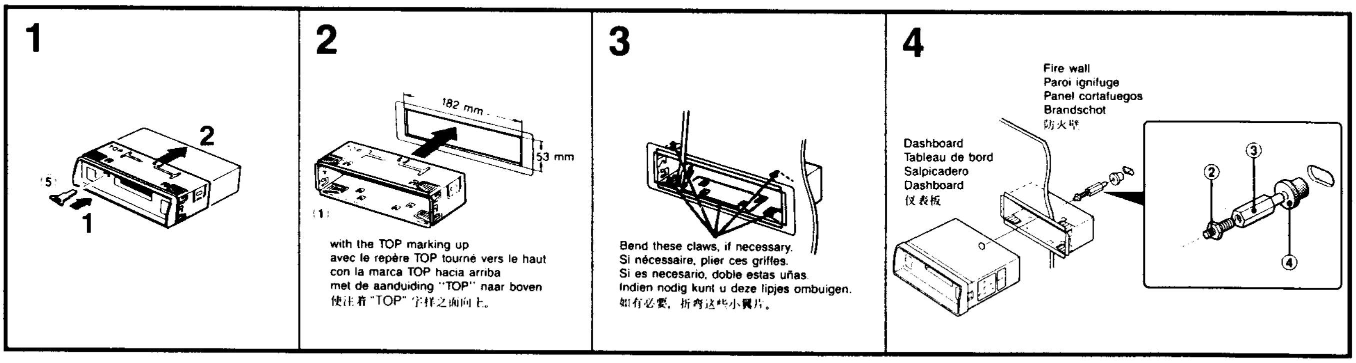
Instalación en el salpicadero

Montagevoorbeeld

Inbouw in het dashboard

安装例子

安装于仪表板上时



with the TOP marking up
avec le repère TOP tourné vers le haut
con la marca TOP hacia arriba
met de aanduiding "TOP" naar boven
使注着"TOP"字样之面向上。

Bend these claws, if necessary.
Si nécessaire, plier ces griffes.
Si es necesario, doble estas uñas.
Indien nodig kunt u deze lipjes ombuigen.
如有必要，折弯这些小翼片。

Note
Keep the release key (5) in the safe place as you may need it in future to remove the unit from the car.

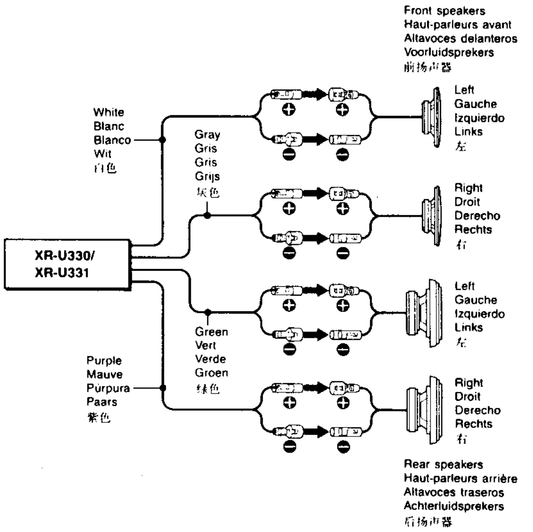
Remarque
Conserver la clé de libération (5) car elle peut être utile pour enlever l'appareil par la suite.

Nota
Guarde la llave liberadora (5) en un lugar seguro ya que puede necesitarla en el futuro para extraer la unidad del automóvil.

Opmerking
Bewaar de sleutel (5) op een veilige plaats, aangezien u deze nodig zult hebben wanneer u het apparaat bij het verlaten van de auto met u mee wilt nemen.

注
松开用钥匙(5)请妥善保管，以备将来要把本装置由汽车里取出时之用。

Speaker Connection
Connexion des haut-parleurs
Conexión de los altavoces
Aansluiten van de luidsprekers
扬声器连接法


Front speakers
Haut-parleurs avant
Altavoces delanteros
Voorluidsprekers
前扬声器
White
Blanc
Blanco
Wit
白色
Gray
Gris
Gris
Grijs
灰色
Left
Gauche
Izquierdo
Links
左
Right
Droit
Derecho
Rechts
右
XR-U330/
XR-U331
Left
Gauche
Izquierdo
Links
左
Green
Vert
Verde
Groen
绿色
Purple
Mauve
Púrpura
Paars
紫色
Right
Droit
Derecho
Rechts
右
Rear speakers
Haut-parleurs arrière
Altavoces traseros
Achterluidsprekers
后扬声器

Notes on speaker connection

- Use speakers with an impedance of 3.2 to 8 ohms, and with adequate power handling capacities. Otherwise, the speakers may be damaged.
- Do not connect the terminals of the speaker system to the car chassis, and do not connect the terminals of the right speaker with those of the left speaker.
- Do not attempt to connect the speakers in parallel.

Remarques sur les connexions des haut-parleurs

- Utiliser des haut-parleurs d'une impédance de 3,2 à 8 ohms et d'une capacité de puissance suffisante, sinon les haut-parleurs risquent d'être endommagés.
- Ne pas raccorder les bornes des haut-parleurs au châssis du véhicule et ne pas raccorder les bornes du haut-parleur droit à celles du haut-parleur gauche.
- Ne pas essayer de connecter les haut-parleurs en parallèle.

Notas sobre las conexiones

- Emplee altavoces con una impedancia de 3,2 a 8 ohmios, y con la capacidad de manejo de potencia adecuada, ya que de lo contrario podrían dañarse.
- No conecte los terminales del sistema de altavoces al chasis del automóvil, ni los terminales del altavoz derecho a los del izquierdo.
- No intente conectar los altavoces en paralelo.

Opmerkingen betreffende het aansluiten van de luidsprekers

- Gebruik luidsprekers met een impedantie van 3,2 tot 8 Ohm en let op dat ze het vermogen van de versterker kunnen verwerken. Als dit wordt verzuimd, kunnen de luidsprekers ernstig beschadigd raken.
- Verbind in geen geval de aansluitingen van de luidsprekers met het chassis van de auto en sluit de aansluitingen van de rechter en linker luidspreker niet op elkaar aan.
- Probeer niet de luidsprekers parallel aan te sluiten.

连接扬声器时之注意事项

- 扬声器请使用阻抗为3.2欧姆到8欧姆之间，并具有适合本装置用的电容量者，否则会损坏扬声器。
- 不可把扬声器端子连接到汽车底盘，也不可把左扬声器和右扬声器相连接。
- 不可平行连接扬声器。

Supplied Mounting Hardware
Matériel de montage fourni
Ferretería de montaje suministrada
Bijgeleverde montage-onderdelen
附属于本机的安装用道具

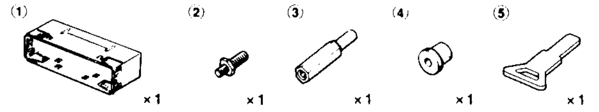
The numbers in the list are keyed to those in the instructions.

Les numéros de la liste correspondent à ceux mentionnés dans les procédures.

Los números de la lista corresponden a los de las instrucciones.

De nummers in de afbeelding verwijzen naar die in de montage-aanwijzingen.

下表里的号码和使用说明书中的插图里之号码相同。


(1)
×1
(2)
×1
(3)
×1
(4)
×1
(5)
×1

Connections

Connexions

Conexiones

Aansluitingen

线路之连接

Caution

- This unit is designed for negative ground 12 V DC operation only.
- Before making connections, disconnect the ground terminal of the car battery to avoid short circuits.
- Connect the **red** power input lead only after all other leads are connected. And be sure to connect it to the positive 12 V power terminal which is energized when the ignition key is set to the accessory position.
- **Run all ground wires to a common ground point.**

Précautions

- Cet appareil est conçu pour fonctionner exclusivement sur courant continu de 12 volts avec masse négative.
- Avant de procéder aux connexions, débrancher la borne de mise à la masse de la batterie du véhicule pour éviter tout court-circuit.
- Brancher le fil d'entrée d'alimentation **rouge** uniquement après que tous les autres fils ont été connectés. En outre, veiller à le raccorder à la borne d'alimentation positive de 12 V qui est énergisée quand la clé de contact est commutée sur la position accessoire.
- **Rassembler tous les fils de mise à la masse en un point de masse commun.**

Precauciones

- Esta unidad ha sido diseñada para funcionar solamente con 12 V CC y negativo a masa.
- Antes de realizar las conexiones, desconecte el terminal de masa de la batería del automóvil a fin de evitar cortocircuitos.
- Conecte el conductor de entrada de alimentación **rojo** solamente después de haber conectado todos los demás. Cerciórese de conectarlo al terminal de alimentación de 12 V positivo. Este conductor deberá energizarse al poner la llave de encendido en la posición para accesorios.
- **Conecte todos los conductores de puesta a masa a un punto común.**

Waarschuwing

- Dit apparaat is uitsluitend geschikt voor gebruik op gelijkstroom van een 12 volt auto-accu, negatief geaard.
- Alvorens te beginnen met het maken van aansluitingen, dient de aardklem van de auto-accu te worden losgemaakt. Dit om kortsluiting te voorkomen.
- Sluit de **rode** stroomdraad pas aan nadat alle andere aansluitingen zijn gemaakt. Zorg ervoor dat deze stroomdraad op de positieve 12 V accu-aansluiting wordt aangesloten. De draad komt dan onder spanning te staan, wanneer de kontaktsleutel in de "ACC" stand wordt gezet.
- **Sluit alle aarddraden op een gemeenschappelijk aardpunt aan.**

注意

- 本装置只可使用负极接地12V直流电操作。
- 连接以前，须先拔取汽车电池的接地端子，以免发生短路。
- 红色电源线必须等所有电线都连接完毕以后才可连接。该红色电源线请连接到当汽车发动机点火钥匙被转在辅助位置时才通电的＋12V电源插口。
- **所有地线都必须连接到同一接地点才行。**

When the Unit is Used in a Car with No Accessory Position on the Ignition Key

— POWER SELECT Switch

The illumination on the front panel is factory-set to be turned on even when the unit is not being played. However, this setting may cause some car battery wear **if the unit is used in a car with no accessory position on the ignition key.** To avoid this battery wear when using the unit in such a car, **set the POWER SELECT switch located on the bottom of the unit to the OFF position, then press the reset button on the front panel of the unit.** The illumination is reset to stay off while the unit is not being played.

Note
The caution alarm for the front panel is not activated when the POWER SELECT switch is set to the OFF position. (except the model for European countries)

Quand l'appareil est utilisé dans une voiture dont la clé de contact ne possède pas de position accessoire

— Interrupteur POWER SELECT

L'éclairage du panneau avant est réglé en usine de façon à s'allumer même quand l'appareil ne fonctionne pas. Cependant, ce réglage risque d'épuiser la batterie **si l'appareil est utilisé dans une voiture dont la clé de contact ne possède pas de position accessoire.** Pour éviter ce désagrément, **commuter l'interrupteur POWER SELECT situé sur le socle de l'appareil sur OFF, puis appuyer sur la touche de réinitialisation sur le panneau avant.** L'éclairage est réinitialisé pour rester éteint quand l'appareil n'est pas utilisé.

Remarque
Quand l'interrupteur POWER SELECT est commuté sur OFF, l'avertisseur du panneau avant ne fonctionne pas. (sauf le modèle destiné aux pays européens)

Cuando vaya a emplear la unidad en un automóvil con llave de encendido sin posición para accesorios

— Selector POWER SELECT

La iluminación del panel frontal ha sido ajustada en la fábrica para que esté activada incluso aunque la unidad no se encuentre en reproducción. Sin embargo, este ajuste puede provocar cierta descarga de la batería del automóvil **si emplea la unidad en un automóvil con llave de encendido sin posición para accesorios.** Para evitar esta descarga de la batería en un automóvil de este tipo, **ponga en OFF el selector POWER SELECT, situado en el panel inferior, y después presione el botón de reposición del panel frontal de la unidad.** La iluminación permancerá desactivada mientras la unidad no se encuentre en reproducción.

Nota
La alarma de aviso para el panel frontal no se activará cuando el selector POWER SELECT esté en OFF. (Excepto el modelo para Europa)

Als het kontaktslot van uw auto geen "ACC" stand heeft

— Stroomkeuzeschakelaar (POWER SELECT)

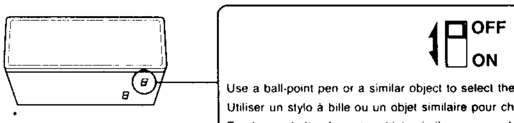
Het apparaat is in de fabriek zo ingesteld dat de verlichting van het voorpaneel altijd aan is, zelfs al is het apparaat zelf uitgeschakeld. **Als het apparaat echter wordt gemonteerd in een auto waar het kontaktslot geen "ACC" stand heeft,** kan dit leiden tot onnodige uitputting van de accu. Om dit te vermijden, **zet u de stroom-keuzeschakelaar (POWER SELECT) aan de onderkant van het apparaat in de "OFF" stand, en vervolgens drukt u de terugsteltoets in.** Met de keuzeschakelaar in deze stand zal de verlichting van het voorpaneel gedoofd zijn, zolang het apparaat niet is ingeschakeld.

Opmerking
Zolang de stroomkeuzeschakelaar (POWER SELECT) in de "OFF" stand staat, werkt de waarschuwingstoon op het voorpaneel van het apparaat niet. (behalve het model voor Europa)

若要在汽车点火钥匙没具有辅助位置的汽车里使用本装置—POWER SELECT开关

前板的照明灯即使在不使用本装置时也会发亮。**若要在汽车点火钥匙没具有辅助位置的汽车里使用本装置的话，**此照明灯将会一直消耗微量的电池电力。因此为了避免在这种状态下的电池电力的消耗，**请把本装置底下的POWER SELECT开关设定在“OFF”之处，然后按压前板的重调键。**则不使用本装置时，照明灯便不发亮。

注
POWER SELECT开关被设定在"OFF"的话，前板的操作错误警告功能便失效。（欧洲机型除外）



Use a ball-point pen or a similar object to select the position of the switch.
Utiliser un stylo à bille ou un objet similaire pour choisir la position de l'interrupteur.
Emplee un bolígrafo u otro objeto similar para cambiar la posición del selector.
Verstel de schakelaar met een balpen of een dergelijk voorwerp.
请以一圆珠笔等先端尖细的道具调整开关位置。

If the AM Frequency Allocation is 10 kHz Interval in Your Country (except the model for European countries)

The AM tuning interval is factory-set to 9 kHz. If the frequency allocation system of your country is based on 10 kHz interval, set the 9k/10k switch located on the bottom of the unit to the 10k position.

Si l'intervalle d'accord AM de votre pays est de 10 kHz (sauf pour le modèle destiné aux pays européens)

L'intervalle d'accord AM a été préréglé sur 9 kHz en usine. Si le système d'allocation de fréquence de votre pays est basé sur un intervalle de 10 kHz, placer l'interrupteur 9k/10k, situé sur le socle de l'appareil, sur la position 10k.

Si el intervalo de asignación de frecuencias de AM de su país es de 10 kHz (excepto el modelo para Europa)

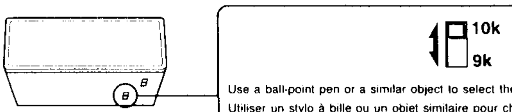
El intervalo de sintonía de AM ha sido ajustado en fábrica a 9 kHz. Si el sistema de asignación de frecuencias de su país se basa en el intervalo de 10 kHz, ponga el selector 9k/10k, situado en la base de la unidad, en la posición 10k.

Als de AM frekwentietoewijzing in uw land is gebaseerd op een 10 kHz interval (behalve het model voor Europa)

Het afsteminterval is in de fabriek ingesteld op 9 kHz. Mocht de frekwentietoewijzing in uw land echter gebaseerd zijn op een afsteminterval van 10 kHz, zet dan de 9k/10k schakelaar aan de onderkant van het apparaat op "10k".

若当地的AM频率配置为10kHz间隔时（欧洲机型除外）

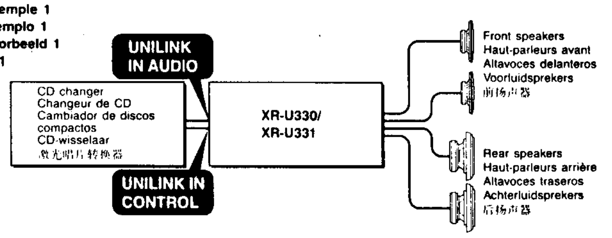
通常，AM调谐间隔在工厂时被设定为9kHz。若当地的频率配置系统是以10kHz间隔为基准时，请将位于底部的9k/10k开关设定于10k的位置。



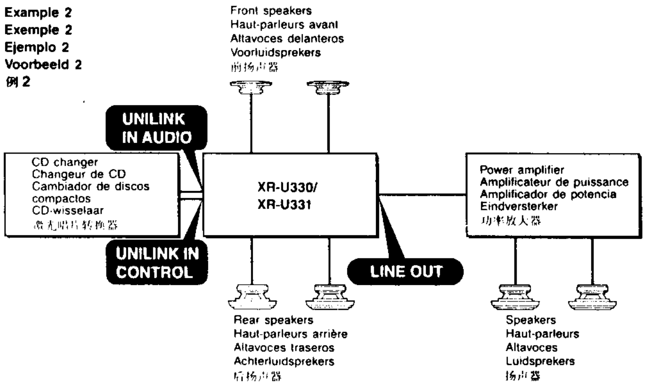
Use a ball-point pen or a similar object to select the position of the switch.
Utiliser un stylo à bille ou un objet similaire pour choisir la position de l'interrupteur.
Emplee un bolígrafo u otro objeto similar para cambiar la posición del selector.
Verstel de schakelaar met een balpen of een dergelijk voorwerp.
请以一圆珠笔等先端尖细的道具调整开关位置

Connection Diagram *Schéma de connexion* *Diagrama de conexión* *Aansluitschema's* *线路连接方块图*

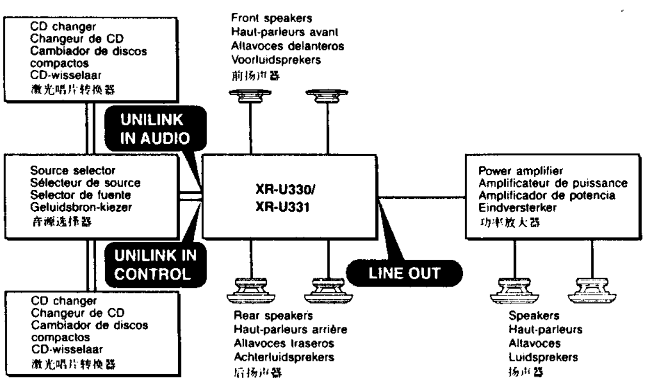
Example 1
Exemple 1
Ejemplo 1
Voorbeeld 1
例1


UNILINK IN AUDIO
CD changer
Changeur de CD
Cambiador de discos compactos
CD-wisselaar
激光唱片转换器
UNILINK IN CONTROL
XR-U330/
XR-U331
Front speakers
Haut-parleurs avant
Altavoces delanteros
Voorluidsprekers
前扬声器
Rear speakers
Haut-parleurs arrière
Altavoces traseros
Achterluidsprekers
后扬声器

Example 2
Exemple 2
Ejemplo 2
Voorbeeld 2
例2


Front speakers
Haut-parleurs avant
Altavoces delanteros
Voorluidsprekers
前扬声器
UNILINK IN AUDIO
CD changer
Changeur de CD
Cambiador de discos compactos
CD-wisselaar
激光唱片转换器
UNILINK IN CONTROL
XR-U330/
XR-U331
LINE OUT
Power amplifier
Amplificateur de puissance
Amplificador de potencia
Eindversterker
功率放大器
Rear speakers
Haut-parleurs arrière
Altavoces traseros
Achterluidsprekers
后扬声器
Speakers
Haut-parleurs
Altavoces
Luidsprekers
扬声器

Example 3
Exemple 3
Ejemplo 3
Voorbeeld 3
例3


CD changer
Changeur de CD
Cambiador de discos compactos
CD-wisselaar
激光唱片转换器
Front speakers
Haut-parleurs avant
Altavoces delanteros
Voorluidsprekers
前扬声器
UNILINK IN AUDIO
Source selector
Sélecteur de source
Selector de fuente
Geluidsbron-kiezer
音源选择器
XR-U330/
XR-U331
Power amplifier
Amplificateur de puissance
Amplificador de potencia
Eindversterker
功率放大器
UNILINK IN CONTROL
LINE OUT
CD changer
Changeur de CD
Cambiador de discos compactos
CD-wisselaar
激光唱片转换器
Rear speakers
Haut-parleurs arrière
Altavoces traseros
Achterluidsprekers
后扬声器
Speakers
Haut-parleurs
Altavoces
Luidsprekers
扬声器

If you connect two or more CD changers, the source selector XA-U20 or XA-U40 (not supplied) is required.

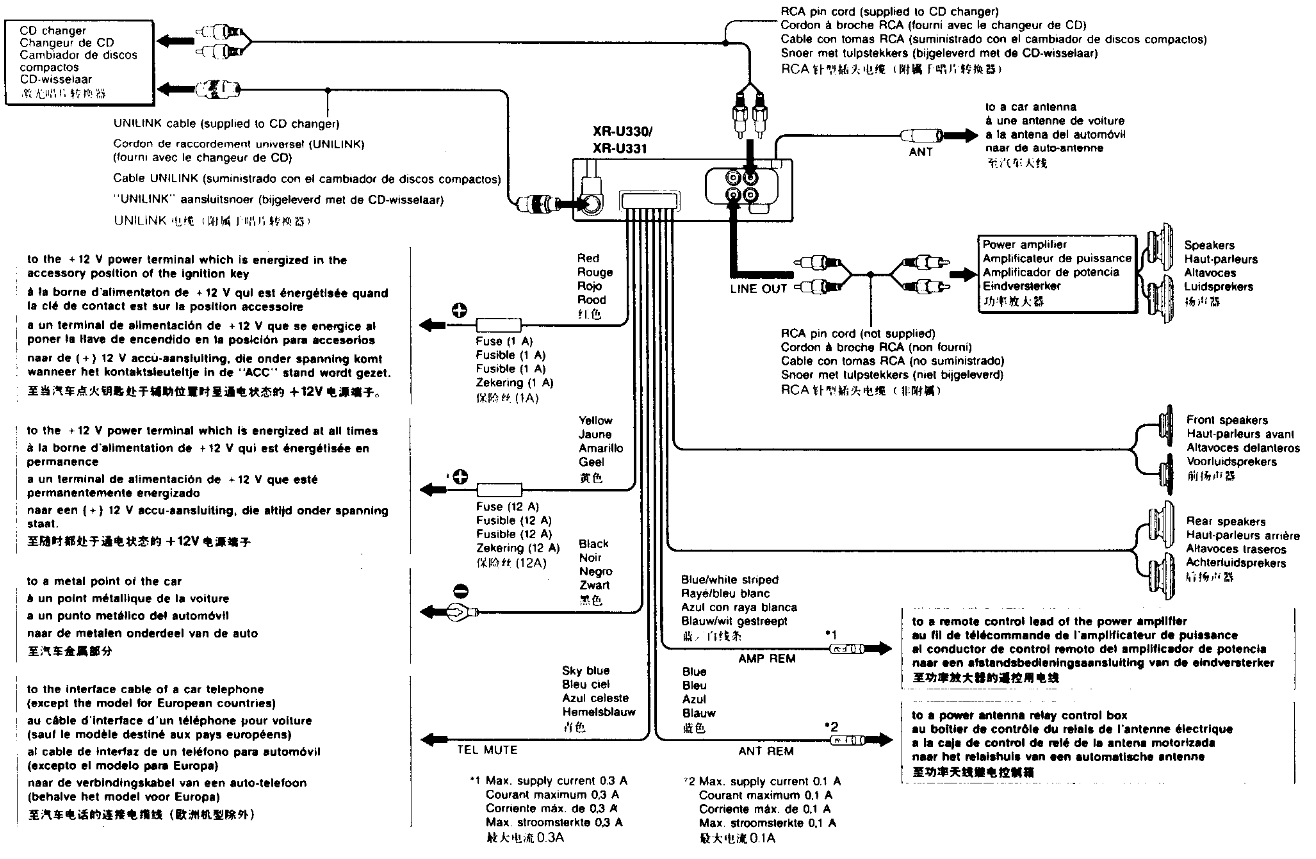
Si deux changeurs de CD ou plus sont utilisés, un sélecteur de source XA-U20 ou XA-U40, (non fourni), est requis.

Si desea conectar dos o más cambiadores de discos compactos, tendrá que emplear un selector de fuente XA-U20 o XA-U40 (no suministrado).

Voor het aansluiten van twee of meer CD-wisselaars is de XA-U20 of XA-U40 geluidsbron-kiezer (niet bijgeleverd) vereist.

若连接2架以上的唱片转换器时，须使用音源选择器XA-U20或XA-U40（非附属）。

Connections of Example 2 *Connexions de l'exemple 2* *Conexiones del ejemplo 2* *Volledige aansluitingen bij voorbeeld 2* *例2的线路连接图*


CD changer
Changeur de CD
Cambiador de discos compactos
CD-wisselaar
激光唱片转换器
RCA pin cord (supplied to CD changer)
Cordon à broche RCA (fourni avec le changeur de CD)
Cable con tomas RCA (suministrado con el cambiador de discos compactos)
Snoer met tulpstekkers (bijgeleverd met de CD-wisselaar)
RCA针型插头电缆（附属于唱片转换器）
UNILINK cable (supplied to CD changer)
Cordon de raccordement universel (UNILINK) (fourni avec le changeur de CD)
Cable UNILINK (suministrado con el cambiador de discos compactos)
"UNILINK" aansluitsnoer (bijgeleverd met de CD-wisselaar)
UNILINK电缆（附属于唱片转换器）
XR-U330/
XR-U331
to a car antenna
à une antenne de voiture
a la antena del automóvil
naar de auto-antenne
至汽车天线
ANT
LINE OUT
Power amplifier
Amplificateur de puissance
Amplificador de potencia
Eindversterker
功率放大器
Speakers
Haut-parleurs
Altavoces
Luidsprekers
扬声器
RCA pin cord (not supplied)
Cordon à broche RCA (non fourni)
Cable con tomas RCA (no suministrado)
Snoer met tulpstekkers (niet bijgeleverd)
RCA针型插头电缆（非附属）
to the +12 V power terminal which is energized in the accessory position of the ignition key
à la borne d'alimentaton de +12 V qui est énergétisée quand la clé de contact est sur la position accessoire
a un terminal de alimentación de +12 V que se energice al poner la llave de encendido en la posición para accesorios
naar de (+) 12 V accu-aansluiting, die onder spanning komt wanneer het kontaktsleuteltje in de "ACC" stand wordt gezet.
至当汽车点火钥匙处于辅助位置时呈通电状态的+12V电源端子。
Red
Rouge
Rojo
Rood
红色
Fuse (1 A)
Fusible (1 A)
Fusible (1 A)
Zekering (1 A)
保险丝 (1A)
to the +12 V power terminal which is energized at all times
à la borne d'alimentation de +12 V qui est énergétisée en permanence
a un terminal de alimentación de +12 V que esté permanentemente energizado
naar een (+) 12 V accu-aansluiting, die altijd onder spanning staat.
至随时都处于通电状态的+12V电源端子
Yellow
Jaune
Amarillo
Geel
黄色
Fuse (12 A)
Fusible (12 A)
Fusible (12 A)
Zekering (12 A)
保险丝 (12A)
Front speakers
Haut-parleurs avant
Altavoces delanteros
Voorluidsprekers
前扬声器
Rear speakers
Haut-parleurs arrière
Altavoces traseros
Achterluidsprekers
后扬声器
to a metal point of the car
à un point métallique de la voiture
a un punto metálico del automóvil
naar de metalen onderdeel van de auto
至汽车金属部分
Black
Noir
Negro
Zwart
黑色
Blue/white striped
Rayé/bleu blanc
Azul con raya blanca
Blauw/wit gestreept
蓝/白线条
*1
AMP REM
to a remote control lead of the power amplifier
au fil de télécommande de l'amplificateur de puissance
al conductor de control remoto del amplificador de potencia
naar een afstandsbedieningsaansluiting van de eindversterker
至功率放大器的遥控用电线
to the interface cable of a car telephone (except the model for European countries)
au câble d'interface d'un téléphone pour voiture (sauf le modèle destiné aux pays européens)
al cable de interfaz de un teléfono para automóvil (excepto el modelo para Europa)
naar de verbindingskabel van een auto-telefoon (behalve het model voor Europa)
至汽车电话的连接电缆线（欧洲机型除外）
Sky blue
Bleu ciel
Azul celeste
Hemelsblauw
青色
TEL MUTE
Blue
Bleu
Azul
Blauw
蓝色
*2
ANT REM
to a power antenna relay control box
au boitier de contrôle du relais de l'antenne électrique
a la caja de control de relé de la antena motorizada
naar het relaishuis van een automatische antenne
至功率天线继电控制箱

*1 Max. supply current 0.3 A
Courant maximum 0,3 A
Corriente máx. de 0,3 A
Max. stroomsterkte 0,3 A
最大电流0.3A

*2 Max. supply current 0.1 A
Courant maximum 0,1 A
Corriente máx. de 0,1 A
Max. stroomsterkte 0,1 A
最大电流0.1A

Press the reset button on the front panel after completing the connections.

Notes on the control leads
- The power antenna control lead (blue) supplies +12 V DC when you turn on the tuner or when you activate the ATA (Automatic Tuner Activation) function.
- A power antenna without relay box cannot be used with this unit.

Les connexions achevées, appuyer sur la touche de réinitialisation sur le panneau avant.

Remarques sur les fils de contrôle
- Le fil de contrôle de l'antenne électrique (bleu) fournit un courant continu de 12 volts quand le tuner est mis sous tension, ou quand la fonction ATA (activation automatique du tuner) est mise en service.
- Une antenne électrique sans boitier de relais ne peut être utilisée avec cet appareil.

Después de haber finalizado las conexiones, presione el botón de reposición del panel frontal.

Notas sobre los conductores de control
- El conductor de la antena motorizada (azul) suministrará +12 V CC cuando conecte la alimentación del sintonizador o cuando active la función de activación automática del sintonizador (ATA).
- Con esta unidad no podrá emplearse una antena motorizada desprovista de caja de relé.

Druk na het maken van alle aansluitingen op de terugsteltoets op het voorpaneel van dit apparaat.

Opmerkingen betreffende de bedieningsaansluitingen
- Het aansluitsnoer voor de automatische antenne (blauw) levert +12 V gelijkstroom als de tuner wordt ingeschakeld of als de ATA automatische tuner-inschakelfunktie in werking treedt.
- Met dit apparaat is het niet mogelijk een automatische antenne zonder relaishuis te gebruiken.

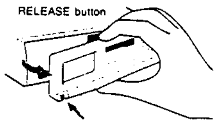
所有线路之连接完毕以后，按压前板的重调键

关于控制线
- 接通调谐机电源时，或使ATA（自动调谐机通电）功能起作用时，功率天线的控制线（蓝色）能供给+12V直流电源。
- 本机不能使用没具有继电箱的功率天线。关于功率天线，详细请参看该天线之使用说明书。

Detaching and Attaching the Front Panel

Detaching the Front Panel

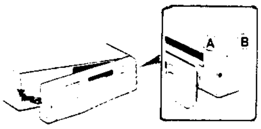
Before detaching the front panel, be sure to press the OFF button first. Then press the RELEASE button to open up the front panel and detach the panel by pulling it towards you as illustrated.



Be sure not to drop the panel when detaching it from the unit.

Attaching the Front Panel

Apply the right hand side of the front panel to the unit by attaching the part A of the front panel to the part B of the unit as illustrated and push until it clicks.

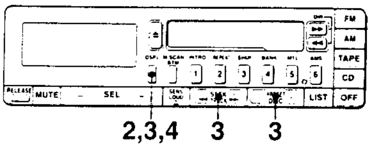


Do not press hard or give excessive pressure to the display window of the front panel.

Caution alarm (except the model for European countries)
If you turn the ignition key to the OFF position without removing the front panel, the caution alarm will be activated and a beep sound will be heard for a few seconds (only when the POWER SELECT switch is set to the ON position).

Notes
- Make sure that the front panel is the right way up when attaching it to the unit as it cannot be attached upside down.
- Do not press the front panel hard against the unit when attaching it to the unit. It can be easily attached by pressing it lightly against the unit.
- Never leave the detached front panel in your car if it is parked in direct sunlight as there could be a considerable rise in temperature inside the car.
- When you carry the front panel with you, put it in the supplied front panel case.
- The display window may become warm while the unit is being operated, however, this is not a sign of a malfunction.

Setting the Clock



The clock has a 12-hour digital indication.

For example, set it to 10:08.

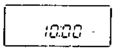
1 **Turn the ignition key to the ON position.**

2 **Press the DSPL button if the clock indication does not come on.**

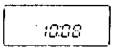
3 **Press the DSPL button for more than two seconds.**

While holding down the DSPL button

Press PRESET DISC **to set the hour digits.**
(to go back) (to go forward)



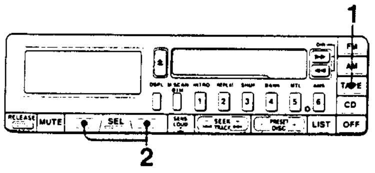
Press SEEK TRACK **to set the minute digits.**
(to go back) (to go forward)



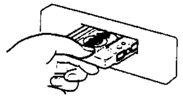
4 **The clock starts activating when you take your finger off the DSPL button.**

Note
If the POWER SELECT switch of the unit is set to the OFF position, the clock cannot be set unless the power is turned on. Set the clock after you turn on the radio, start CD play or play back a tape.

Listening to the Tape Playback



1 **Insert a cassette to start playback.**



If a cassette is already inserted

2 **Adjust the volume.**

Other Operations

To wind the tape rapidly

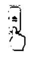
Direction indicator	To advance	To rewind
▶	Depress ▶▶	Depress ◀◀
◁	Depress ◀◀	Depress ▶▶

To resume playback, press ▶▶ or ◀◀ lightly, so as not to depress it.

To listen to the reverse side of the cassette

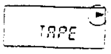
▶▶
◀◀ (Depress both simultaneously.)

To eject the cassette

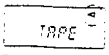


Getting the clock indication during tape playback
Press the DSPL button.
Press it again to return to the previous indication.

Tape transport direction indication



The side facing up is being played



The side facing down is being played.

Precautions

- Before operating the unit for the first time or after replacing the car battery, press the reset button on the front panel with a ball-point pen etc., and then start operating the unit.
- If your car was parked in direct sunlight resulting in a considerable rise in temperature inside the car, allow the unit to cool off before operating it.
- If no power is being supplied to the unit, check the connections first. If everything is in order, check the fuse.

If you have any questions or problems concerning your unit that are not covered in this manual, please consult your nearest Sony dealer.

Notes on Cassettes

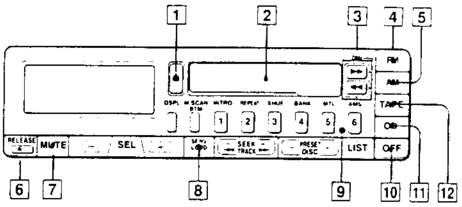
Cassette care

- Avoid touching the tape surface of a cassette, as any dirt or dust will contaminate the heads.
- Keep cassettes away from equipment with built-in magnets such as speakers and amplifiers, as erasure or distortion on the recorded tape could occur.
- Do not expose cassettes to direct sunlight, extremely cold temperatures or moisture.
- The cassette shell may become warm when the tape is played back for a long period of time because of the built-in power amplifier. However, this is not a sign of a malfunction.

Note on cassettes longer than 90 minutes

The use of cassettes longer than 90 minutes is not recommended except for long continuous play. The tapes used for these cassettes are very thin and tends to be stretched easily. Frequent playing and stopping operation for these tapes may cause them to be pulled into the cassette deck mechanism.

Location and Function of Controls



Refer to the pages in ● for details.

1 ⏏ (eject) button ⑬
Press to stop tape playback and eject the cassette.

2 Cassette insertion door

3 ◀◀ / ▶▶ (fast winding) buttons/DIR (tape transport direction change) buttons ⑬

4 FM (radio on) button ⑮

5 AM (radio on) button (XR-U330) ⑮
MW/LW (radio on/band select) button (XR-U331) ⑯

6 RELEASE button ⑬

7 MUTE button
Press to mute the sound momentarily. Press again to restore the same volume level. This button will be also canceled in the following cases:
- —when the – or OFF button is pressed.
- —when ejecting a cassette by pressing the ⏏ button during tape playback.

8 SENS/LOUD/ □□ (sensitivity/loudness/Dolby NR) button ⑯ ⑰
Press for more than two seconds to reinforce the bass and treble especially when listening at a low volume level. To cancel this mode, press it again for more than two seconds.

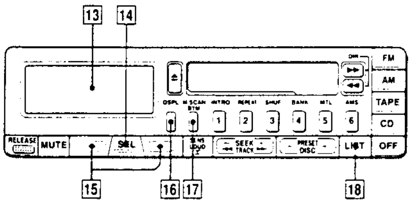
9 Reset button
Press this button when you use this unit for the first time, when you have changed the car battery or when the buttons of this unit do not function.

10 OFF button

11 CD (disc play/CD changer select) button ㉗ ㉙

12 TAPE (tape playback) button ⑫

Location and Function of Controls



13 Display window

14 SEL (control mode select) button
Press to select the desired control mode: BAS (bass), TRE (treble), BAL (balance), FAD (fader) or VOL (volume).

15 – + buttons
Controlling the bass/treble/balance/fader/volume

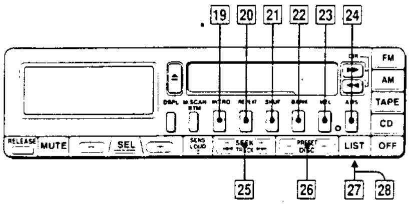
16 DSPL (display change/time setting) button ⑪ ⑯ ⑰ ㉔ ㉗ ㉝

17 M.SCAN/BTM (memory scan/best tuning memory) button ⑲ ㉑

18 LIST (custom-file list) button ㉘ ㉞

Display window	Control mode	– / +	
		Press –	Press +
BAS	Bass control	For less bass	For more bass
TRE	Treble control	For less treble	For more treble
BAL	Balance control	To decrease the right-speakers' volume	To decrease the left-speakers' volume
FAD	Fader control	To decrease the rear-speakers volume	To decrease the front-speakers' volume
VOL	Volume control	For less volume	For more volume

The – + buttons normally function as the volume control. Adjust the level within three seconds after selecting the desired control mode with the SEL button. Otherwise the mode will go back to the volume control mode.



	During tape playback	During disc play	During radio reception
19	—	INTRO (track cue play) button ㉝	Preset number buttons ㉙ ㉒
20	—	REPEAT (repeat play) button ㉜	
21	—	SHUF (shuffle play) button ㉛	
22	—	BANK button ㊵	
23	MTL (metal/CrO_2) button ⑭	—	
24	AMS (Automatic Music Sensor) button ⑮	—	
25	—	TRACK (disc track change) button ㉙	SEEK (automatic tuning) button ⑯
26	—	DISC (disc change/manual search) button ㉘ ㉚	PRESET (preset search/manual tuning) button ⑲ ㉒

27 POWER SELECT switch (located on the bottom of the unit)
See "POWER SELECT Switch" in the Installation/Connections manual.

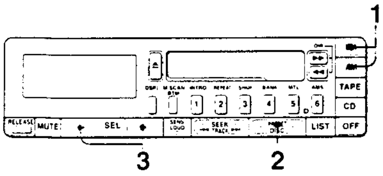
28 9K/10K SELECT switch (located on the bottom of the unit) (except the model for European countries)
See "9K/10K SELECT Switch" in the Installation/Connections manual.

Muting a beep sound

Press the AMS 6 button while pressing the SEL button. To obtain the beep sound again, press these buttons once more.

Tuning in by Adjusting the Frequency

—Manual Tuning



Use the Manual Tuning function if you know the frequency of the desired station.

1 **Select the desired band.**

FM or AM (MW/LW)

XR-U330 XR-U331

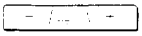
The FM band changes in the following order:
FM1 ➔ FM2 ➔ FM3.

2 **Press the PRESET button for more than 0.5 second.**

PRESET DISC
PRESET DISC

For lower frequencies For higher frequencies

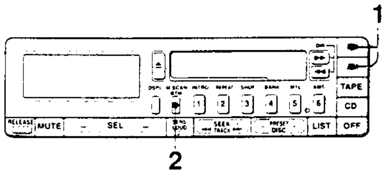
3 **Adjust the volume.**



PREVENTING ACCIDENTS!
While you are driving, the use of the Automatic Tuning and the BTM function is recommended in favor of the Manual Tuning.

Memorizing the Stations Automatically

—BTM (Best Tuning Memory) Function



Clearest receiving stations are automatically searched and memorized on each band (FM1, FM2, FM3 and AM (MW, LW)). Up to 6 stations on each band can be stored on the preset number buttons 1 to 6 in the order of frequency.

1 **Select the desired band.**

FM or AM (MW/LW)

XR-U330 XR-U331

The FM band changes in the following order:
FM1 ➔ FM2 ➔ FM3.

2 **Keep the BTM button pressed for more than two seconds.**

Note
The receivable frequencies of FM1, FM2 and FM3 are the same.

The BTM function

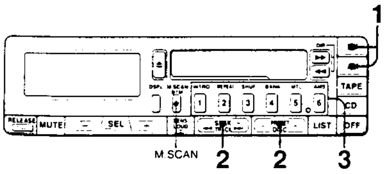
The BTM function searches all the receivable stations within the currently selected band and memorizes the ones in good receiving conditions in sequence from the lowest frequency.

How to memorize the stations on the preset number buttons

- When there is no preset number indicated on the display window: all the preset number buttons set in the currently selected band will be filled with the memories
- When there is a preset number indicated on the display window: the unit will memorize the stations on the preset number buttons from the one currently being displayed. For example, when you choose FM2 and preset number 3 is being displayed, the operation will start from the preset number 3 on FM2, and stops at the preset number 6 on FM3

Note
There may be cases where there are not enough receivable stations due to the lack of stations in the vicinity or weak broadcasting signals. In such cases, the BTM operation may stop without all the buttons being occupied with memories

Memorizing Only the Desired Stations



Up to 6 stations on each band (FM1, FM2, FM3 and AM (MW, LW)) can be stored in the memory in order of your choice.

For example, to store a station on the preset number button 1:

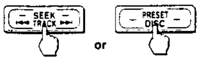
1 **Select the desired band.**

FM or AM (MW/LW)

XR-U330 XR-U331

The FM band changes in the following order:
FM1 ➔ FM2 ➔ FM3.

2 **Tune in the station which you wish to store on the preset number button.**



3 **Keep the preset number button pressed for about two seconds.**

INTRO
1
8750

Repeat the same procedure to store other stations.

Each preset number button has only one memory for a band
The previously memorized station will be erased when you enter a new station of the same band on the same preset number button.

The number of the preset number button of which you are pressing now comes on the display window. When the "MEM" indication comes on, the station is stored in the memory and the operation is now completed. The "MEM" indication will turn off after a while.

Checking in Order, All the Stations Stored in the Memory — Memory Scan Function

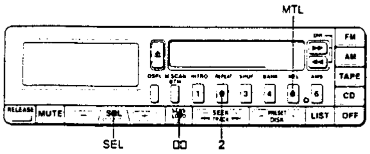
(Press lightly.)

The tuner will receive in order, all the stations stored in the memory for five seconds each.

To cancel
Press the M.SCAN button lightly once more. The memory scan will be canceled and you will be able to listen to the station currently being received.

Note
There may be cases in which even the stations stored in the memory cannot be received due to weak signals in the vicinity of your car.

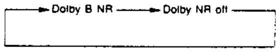
Listening to the Tape Playback



Listening to the CrO2 (TYPE II) or Metal (TYPE IV) Tapes

The "MTL" indication appears on the display window.
To listen to the normal (TYPE I) tapes, press the button again.

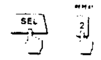
Listening to a Tape Recorded in the Dolby-NR System



The Dolby noise reduction system reduces the hiss noises which occur during tape playback in the treble and bass areas.
This system emphasizes the treble area during the recording and returns it to the original level at the playback.
Therefore, when you listen to the tapes which are recorded in the Dolby B NR system, be sure to use the Dolby B NF system during a playback as well.

Turning on the Radio while the Tape is Being Fast-wound — *ATA Function*

Press the preset number button 2 while pressing the SEL button.



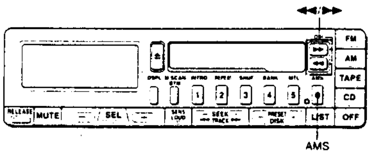
The tuner turns on automatically when you depress the ◀◀ or ▶▶ button during tape playback.
To cancel, press the preset number button 2 while pressing the SEL button.

Note
The DD button also functions as the LOUD button if it is kept pressed for more than two seconds

Note
The ATA will not function while the unit is in the AMS mode

Getting the frequency indication while the ATA is operating
Press the DSPL button several times. The display window shows the frequency which you tuned in last time

The car antenna will automatically be extended while the ATA is activated (Only the cars equipped with power antennas)
Unless you cancel the ATA, the car antenna will be kept extended in order to receive radio programs during tape playback.



Locating the Beginning of a Track
—AMS Function

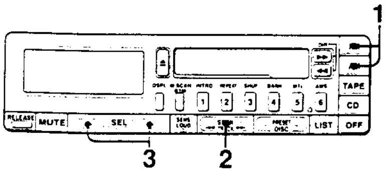
Press the 6 button, then depress the ◀◀ or ▶▶ button to refer to the following table.

Indicator	Cassette side being played	Desired selection	
		Next track	Current track
▶	Side facing upwards	Depress ▶▶.	Depress ◀◀.
<	Side facing downwards	Depress ◀◀	Depress ▶▶.

The AMS may not function properly and the track starting positions may not be located in the following cases:
- —Tapes which contain noises between the tracks are used.
- —Tapes which contain less than four seconds blank spaces in between the tracks are used.
- —When you depress the ◀◀ or ▶▶ button immediately before or after the track which you wish to locate.

The unit may consider the followings as the blank spaces between the tracks and start playback:
- —Long silent music sections on a track.
- —Quiet sections or a continuous low volume sound on a track.
- —Tracks which contain a gradual increase and decrease of the sound volume.

Searching for the Stations Automatically
—Automatic Tuning



If you do not know the frequency of the station you wish to tune in, it is useful to use the Automatic Tuning function.

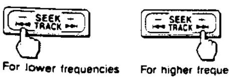
1 **Select the desired band.**

FM
or
AM
MW/LW

XR-U330 XR-U331

The FM band changes in the following order:
FM1 → FM2 → FM3.

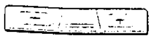
2 **Press the SEEK button.**



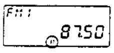
For lower frequencies For higher frequencies

The scanning stops when a station is received. Press the button repeatedly until the desired station is received.

3 **Adjust the volume.**

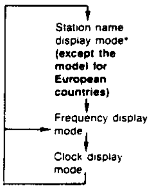


While receiving FM broadcasting

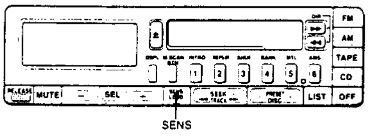


The "ST" indication will appear when an FM stereo program with sufficient signal strength is tuned in. The program will be received in stereo.

Getting the clock indication while listening to the radio
Press the DSPL button. Each time you press the button, the display mode changes as follows:

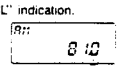

Station name display mode* **(except the model for European countries)**
Frequency display mode
Clock display mode

* Refer to page 24 for the station name display mode



Avoiding the Automatic Tuning from Stopping on Stations Too Frequently
—Local Seek Mode

Press the SENS button lightly to get the "LCL" indication.



The mode changes to the local seek mode where only the stations with relatively strong signals are tuned in. It functions only when the Automatic Tuning is in operation.

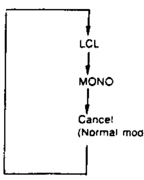
If FM Stereo Broadcasting is Difficult to Receive—*Monaural Mode*

Press the SENS button lightly to get the "MONO" indication.

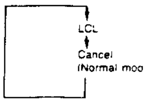
The sound improves, but it will become monaural.

Each time you press the SENS button, the mode changes as follows:

While receiving FM broadcasting

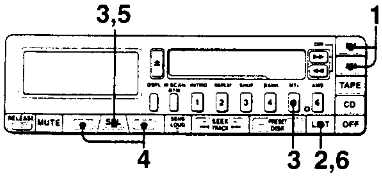


While receiving AM (MW, LW) broadcasting



Note
The SENS button also functions as the LOUD button if it is kept pressed for more than two seconds

Editing the Registered Station Names



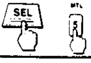
Erasing the Station Names

1 Turn the radio on and tune in any station.

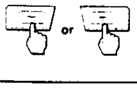
2 Press the LIST button for more than two seconds to enter the name edit mode.

The currently received station will appear on the display window.

3 Press the preset number button 5 while pressing the SEL button.



4 Press the ⊖ or ⊕ button to search for the names you wish to erase.



The station names stored in the memory of the tuner will appear on the display window in the same order as they were registered*.

5 Press the SEL button for more than two seconds to erase the displayed name.

Repeat the steps 4 and 5 to erase the other station names.

6 Press the LIST button for more than two seconds.

The unit will go back to the normal mode.

The alternative method to erase the name
You can erase a name by selecting eight "_"s (underbars) as described in step 3 of "Changing the Station Names". (page 25)

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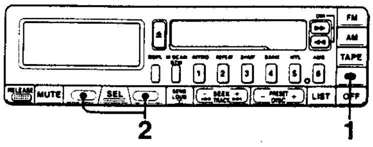
* If you have erased some of the names before, they will not come on in the same order as they were registered.

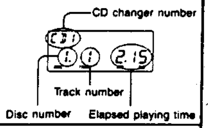
Listening to the CD Play

—When Optional Sony CD Changers are Connected



1 Press the CD button.

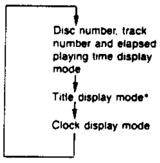
CD play will start.



2 Adjust the volume.

If the unit is set in the normal playing mode, after the end of a disc, the disc with the next number shown will be automatically played. If two or more CD changers are connected, after the end of the last disc, the first disc in the CD changer with the next number shown will be played. The order of the CD play can be rearranged by changing the playing modes. For details, see "Playing in Other Modes". (page 31)

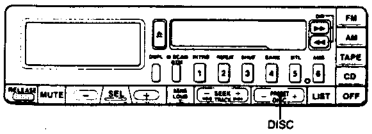
Getting the clock display while listening to a disc
Press the DSPL button. Each time you press the button, the display mode will change cyclically as follows:



Disc number, track number and elapsed playing time display mode
↓
Title display mode*
↓
Clock display mode

* It is necessary to put titles onto the discs in advance. See page 34 for details.

Locating a Desired Disc, Track or Part of a Track



You can use this function to quickly locate your desired disc, track or part of a track.

Searching Your Desired Discs in Turn

—Disc Search

Press the DISC button lightly during CD play.

To search previous disc numbers →

PRESET DISC

(Press lightly.)

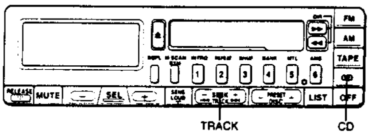
To search the disc numbers ahead →

PRESET DISC

(Press lightly.)

You can search a disc by displaying the titles of the discs registered with the Disc Memo Function. For details, see page 34.

Note
Make sure that you press the DISC button lightly. If you keep it pressed, the unit will enter the Manual Search mode.



Listening to the Discs in Another CD Changer *(when two or more CD changers are connected)*

Press the CD button during CD play.

The CD changer number changes.

Locating the Beginning of a Track

Press the TRACK button during CD play.

To listen to the current track again from the beginning →

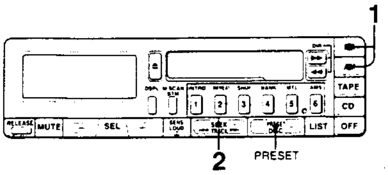
If the button is kept pressed, the beginnings of the previous tracks will be located.

To listen to the next track from the beginning →

If the button is kept pressed, the beginnings of the succeeding tracks will be located.

Note
When you keep pressing the TRACK button and come to either the beginning or the end of a disc, you will not be able to go any further.

Receiving Stations Stored in the Memory

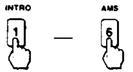


1 **Select the desired band.**

FM
or
AM
MW/LW
XR-U330
XR-U331

The FM band changes in the following order:
FM1 → FM2 → FM3.

2 **Press the preset number button lightly on which the desired station is to be stored.**



Notes
- There may be cases in which even the stations stored in the memory cannot be received due to weak signals in the vicinity of your car.
- If you keep pressing the preset number button for more than two seconds, the currently received station will be memorized. To receive the previously memorized station, make sure that the preset number button is pressed only lightly.

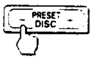
Receiving in Order the Stations Stored in the Memory—*Preset Search Function*

PRESET
DISC

(Press lightly.)

The number will advance in the following order:

1 → 2 → ... → 5 → 6 → 1 → 2 → ...
(number of the preset number buttons)



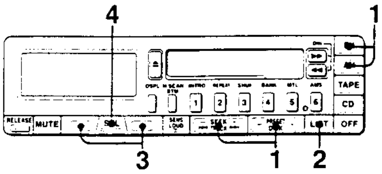
(Press lightly.)

The number will reverse in the following order:

6 → 5 → ... → 2 → 1 → 6 → 5 → ...

Displaying the Name of Each Station

—*Station Memo Function (except the model for European countries)*



You can store the names of radio stations in the memory of the tuner. The name of station can be displayed on the display window while it is tuned in.

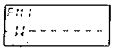
Storing the Station Names to the Memory

1 **Tune in a station whose name you wish to register.**

2 **Press the LIST button for more than two seconds to enter the name edit mode.**

LIST
FM1
Name edit mode

3 **Press either the ⌸ or ⌸ button to select the desired characters and numbers.**



Each time you press the ⌸ or ⌸ button, characters will come on in the following order:

→ _ → A → B → C → ... → X → Y → Z → 0 → 1 → 2 → 3 → ...

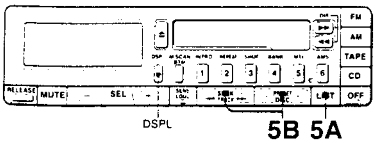
→ _ → · → (→) → · → → → - → - → · → 9 → ...

4 **Press the SEL button after locating the desired character or number.**

The flashing part will move to the next space on the right. Repeat steps 3 and 4 to enter the entire name. Up to eight characters can be used per name.

Notes
- If you press the SEL button when the eighth character (farthest right character) is flashing, the flashing part will go back to the first character (farthest left character).
- If you wish to put a blank space after a character, select the "_" (under-bar).

Displaying the Name of Each Station

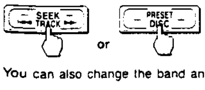


5 **To register the name, use one of the following two methods.**

A **Press the LIST button for more than two seconds.**

The unit will go back to the normal mode.

B **Tune in another station by pressing the SEEK or PRESET button and repeat the procedures.**



You can also change the band and repeat the process.

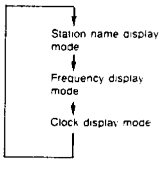
Notes
- If you turn off the tuner before you complete this procedure, the name you have just entered will not be registered.
- You can store up to 40 names, but if you try to enter more, the "FULL" indication will come on the display window and you will not be able to register them. You can register more names after erasing some of the existing names.

Displaying the Station Names

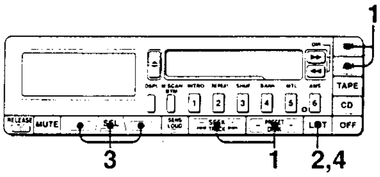
While listening to the radio, press the DSPL button.

If the name of the station is not registered, "........" will come on the display window.

Each time you press the DSPL button while listening to the radio
The display mode changes cyclically as follows:



Editing the Registered Station Names



The names you have already put onto the radio stations can be altered or erased.

Changing the Station Names

1 **Tune in the station whose name you wish to change.**

2 **Press the LIST button for more than two seconds to enter the name edit mode.**

The currently received station will appear on the display window.

3 **Press the SEL button to make the part you wish to edit flash.**
Select the characters or numbers using the ⌸ or ⌸ button.

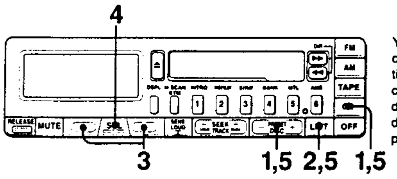
Tune in other stations using the SEEK or PRESET button and repeat step 3, if necessary.

4 **Press the LIST button for more than two seconds.**

The new station names are registered.

Displaying the Title of Each Disc

—Disc Memo Function



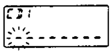
You can put a title of your own choice to a disc (one title per disc). The title can be displayed on the display window while the disc is being loaded and played.

Putting Your Personalized Titles onto the Discs

1 **Play the disc that you wish to title.**

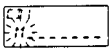
CD
PRESET DISC

2 **Press the LIST button for more than two seconds to enter the name edit mode.**



Name edit mode

3 **Press either the ⊖ or ⊕ button to select the desired characters and numbers.**

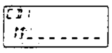


Each time you press the ⊖ or ⊕ button, characters will come on in the following order:

→ _→A→B→C→...→X→Y→Z→0→1→2→3→...

→ _→,→(→)→\→/→'→-→+→9→...

4 **Press the SEL button after locating the desired character or number.**



The flashing part will move to the next space on the right. Repeat steps 3 and 4 to enter the entire titles. Up to eight characters can be used per disc.

Notes

- If you press the SEL button when the eighth character (farthest right character) is flashing, the flashing part will go back to the first character (farthest left character).
- If you wish to put a blank space after a character, select "_" (under-bar).

5 **To register the title, use one of the following methods 1 through 4.**

1 **Press the LIST button for more than two seconds.**

The unit will go back to the normal CD playing mode.

2 **Press the LIST button lightly.**

(Press lightly.)

The unit enters the PLAY/SKIP mode in which the play and skip modes can be set. (Continue to step 4 in "Setting the Play and Skip Modes on the Discs" on page 38.)

3 **Press the DISC button lightly.**

PRESET DISC

(Press lightly.)

You can change the disc and continue to put the titles onto the discs.

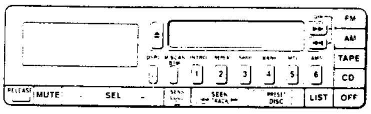
4 **Press the CD button (only when two or more CD changers are connected).**

You can go to the next CD changer and the unit will return to the normal playing mode.

Where are the contents of the custom file stored?
The information registered in the custom file will be stored in the memory of the currently selected CD changer. You can play a custom-filed disc in another CD changer and use the custom file function as long as they are connected to the currently selected CD changer with the UNILINK system.

You can register the maximum of 110 discs on one CD changer
If you try to register more than 110 discs, the unit will display "FULL" on the display window and will not accept the command for custom-filing. In this case, you will have to erase the memory of the other discs before you enter the new ones. See page 42 for details on erasing the title.

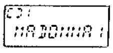
When two or more CD changers are connected
The information registered in the custom file can be retrieved by other CD changers using the communication signals sent between the CD changers provided that they are connected by UNILINK cables.



DSPL

Displaying the Title

While the disc is playing, press the DSPL button.



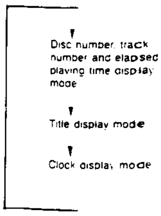
If the title of a disc is not registered, "--------" will come on the display window.

While loading the discs
Whatever the display mode is, the indication automatically changes as follows:

Title of the disc (two seconds) → Disc and track number (two seconds) → Currently selected display mode

The registered titles of the discs may not come on the display window immediately during loading. This occurs because the unit displays the title after identifying the disc by reading the TOC* (Table of Contents) information of the disc. Therefore, while the CD changer is loading the disc for the first time, the registered title of the disc cannot be displayed. Once the disc has been loaded and played, the TOC information would have been read and the title will be displayed even while the disc is being loaded.

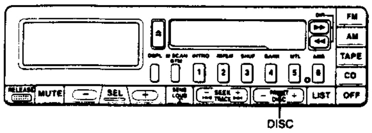
Each time you press the DSPL button while the disc is playing
The indication on the display window will change cyclically as follows.



Disc number, track number and elapsed playing time display mode
↓
Title display mode
↓
Clock display mode

* The TOC information of the disc contains the total length of playing time and the codes to search the beginning and end of each track, and so on.

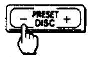
Locating a Desired Disc, Track or Part of a Track



Searching for a Desired Part of Track
—Manual Search

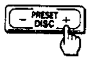
Keep the DISC button pressed during CD play.

To go back →



(Keep on pressing.)

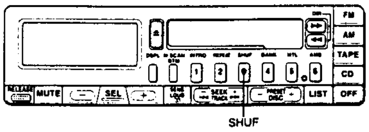
To go ahead →



(Keep on pressing.)

The elapsed playing time of the track will be displayed on the display window during the manual search.

Playing in Other Modes



Playing the Discs Randomly
—Shuffle Play Functions

Playing the tracks on the currently selected disc randomly —Disc shuffle play

Press the 3 button to get the "SHUF 1" indication during CD play.

When all the tracks on a disc have been played, it will proceed on to the next disc.

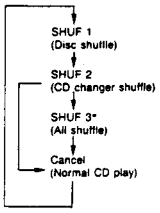
Playing every track on every disc in the currently selected CD changer randomly—CD changer shuffle play

Press the 3 button to get the "SHUF 2" indication during CD play.

Playing randomly every track on every disc in all the connected CD changers—All shuffle play (when two or more CD changers are connected)

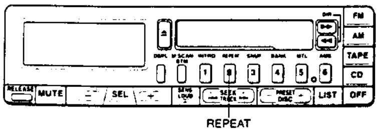
Press the 3 button to get the "SHUF 3" indication during CD play.

The function of the SHUF button changes cyclically as follows:



* All shuffle play (SHUF 3) mode functions only when two or more CD changers are connected to the unit. When only one changer is connected, the "SHUF 3" indication will not be displayed. In this case, if you press the SHUF button again while the "SHUF 2" indication is being displayed, the shuffle play will be canceled.

Playing in Other Modes



Playing a Disc Repeatedly *—Repeat Play Functions*

Playing the currently selected track repeatedly —Track repeat

Press the 2 button to get the "REP 1" indication during CD play.

When the track is over, the CD play will be repeated from the beginning of that track.

Playing the currently selected disc repeatedly —Disc repeat

Press the 2 button to get the "REP 2" indication during CD play.

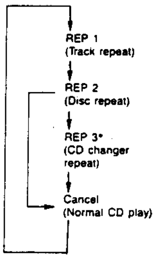
When the last track of the currently selected disc is over, the CD play will be repeated from the beginning of that disc.

Playing the discs in the currently selected CD changer repeatedly—CD changer repeat (when two or more CD changers are connected)

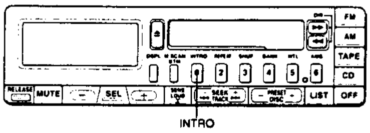
Press the 2 button to get the "REP 3" indication during CD play.

When the last disc of the currently selected CD changer is over, the CD play will be repeated starting from the first disc in the currently selected CD changer.

The function of the REPEAT button changes cyclically as follows:



* CD changer repeat (REP 3) mode functions only when two or more CD changers are connected to the unit. When only one changer is connected, the "REP 3" indication will not be displayed. In this case, if you press the REPEAT button again while the "REP 2" indication is being displayed, the repeat play will be canceled.

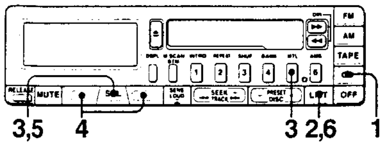


Searching for a Desired Track by Listening to the First 10 Seconds of Each Track
—Intro Scan Function

Press the 1 button during CD play.

The first 10 seconds of all the tracks on the currently selected disc will be played in order.
When the first 10 seconds of the last track on a disc is played, it will move on to the next disc.
When the first 10 seconds of the last disc in the first CD changer has been played, the first disc in the next CD changer will be played (only when two or more CD changers are connected).

When you find the desired track
Press the INTRO button once more. The intro scan function will be canceled and you can continue to listen to the track.



If you erase the title, the PLAY/SKIP settings of the Bank function will be erased as well.

Erasing a Title

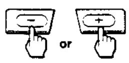
1 **Select the CD changer and play any disc.**

2 **Press the LIST button for more than two seconds to enter the name edit mode.**

The title of the currently played disc will appear on the display window.

3 **Press the preset number button 5 while pressing the SEL button.**

4 **Press the ⊖ or ⊕ button to search for the title you wish to erase.**



The titles stored in the CD changer currently selected will appear on the display window in the same order as they were registered*.

5 **Press the SEL button for more than two seconds after the title you wish to erase is displayed.**

Repeat steps 4 and 5 on other titles, if necessary.

6 **Press the LIST button for more than two seconds.**

Now the title and the PLAY/SKIP settings are erased. The unit will go back to the normal CD playing mode.

The alternative method to erase a title
You can erase a title by selecting eight "_"s (underbars) as described in step 3 of "Changing the Title and the PLAY/SKIP Settings". (page 41)

---

* If you have erased some of the titles before, they will not come on in the same order as they were registered.

Maintenance

Fuse Replacement

If the fuse blows, check the power connection and replace the fuse. If the fuse blows again after the replacement, there may be an internal malfunction. In this case, consult your nearest Sony dealer.

Warning
Use the specified amperage fuse.
Use of a higher amperage fuse may cause serious damage.

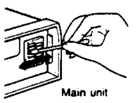
Cleaning the Head and the Tape Path

Prolonged use may contaminate the tape head and the tape path. Contamination causes sound drop-outs in playback.
Clean the tape head and the tape path every two weeks to enjoy optimum hi-fi stereo sound.
Use a commercially available cleaning cassette.

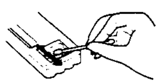
Cleaning the Connectors

The unit may not function properly if the connectors between the unit and the front panel get contaminated with dirt. In order to prevent this from happening, open up the front panel by pressing the RELEASE button then detach it and clean the connectors from time to time.

Clean the connectors with a cotton swab as illustrated. Be sure to clean them in the direction of the arrow.

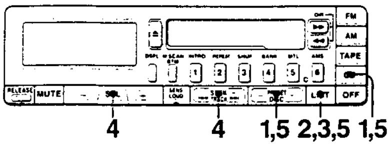


Main unit



Back of the front panel

Playing Selected Tracks on a Disc *—Bank Function*



You can listen to only the desired tracks by using this function.

Setting the Play and Skip Modes on the Discs

1 **Play the disc to which you wish to set these modes.**

CD
PRESET DISC

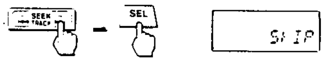
2 **Press the LIST button for more than two seconds and put the titles onto the discs.**

See page 34 for details about putting on a title. If the title has already been registered, proceed to step 3.

3 **Press the LIST button lightly to enter the PLAY/SKIP edit mode.**
When the unit enters the PLAY/SKIP edit mode, the indication on the display window will look like the illustration below.

PLAY/SKIP edit mode

4 **Press the TRACK button to select the track number you wish to skip and press the SEL button.**



The indication changes from "PLAY" to "SKIP". If you wish to return to "PLAY", press the SEL button again.

Repeat the operation in this step to set either the "PLAY" or "SKIP" mode on all the tracks.

Notes
- When the title is not registered, you cannot enter the PLAY/SKIP edit mode even if you press the LIST button.
- You can only set the "SKIP" mode onto up to 24 tracks. If a disc has more than 24 tracks, you will not be able to set the SKIP mode on the tracks after the 24th track.
- You cannot set the SKIP mode onto all of the tracks on a disc.

5 **To register the settings, use one of the following methods ① through ④.**

① **Press the LIST button for more than two seconds.**

The unit will go back to the normal CD playing mode.

② **Press the LIST button lightly.**

The unit re-enters the name edit mode. See page 34.

(Press lightly.)

③ **Press the DISC button lightly.**

PRESET DISC

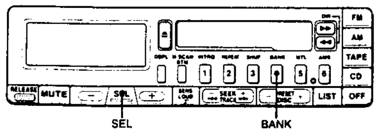
You can change the disc and continue to put the titles onto the discs.

(Press lightly.)

④ **Press the CD button (only when two or more CD changers are connected).**

You can go to the next CD changer and the unit will go back to the normal playing mode.

Playing Selected Tracks on a Disc



You can listen to only the desired tracks by using this function.

Playing with the Bank Function

To play the tracks with "PLAY" settings

Press the BANK button during CD play.

The "BANK" indication will come on the display window. The unit will start playing the tracks with "PLAY" settings which have been set by the PLAY/SKIP mode.

To go back to the normal playing mode
Press the BANK button again.

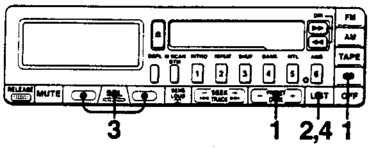
To play the tracks with "SKIP" settings

Press the BANK button while pressing the SEL button.

The "BANK" indication will flash on the display window. The unit starts playing the tracks with "SKIP" settings which have been set by the PLAY/SKIP mode.

To go back to the normal playing mode
Press the BANK button while pressing the SEL button.

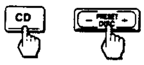
Editing a Custom File



When you change the title, the PLAY/SKIP settings of the Bank function will not be erased at the same time.

Changing the Title and the PLAY/SKIP Settings

1 **Play the disc you wish to edit.**



2 **Press the LIST button for more than two seconds to enter the name edit mode.**

The title of the currently played disc will appear on the display window.

3 **Press the SEL button to make the part you wish to edit flash. Select the characters and numbers using the ⊖ or ⊕ button.**

If you wish to change the titles of other discs, repeat steps 1 through 3 on the discs after changing them with the DISC or CD button.

4 **Press the LIST button for more than two seconds.**

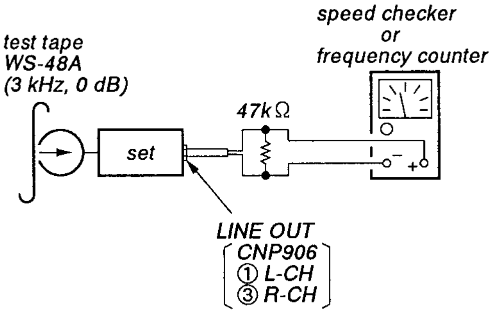
Now the new title is registered.

Note
If you wish to change the PLAY/SKIP settings of the Bank function, press the LIST button lightly to enter the PLAY/SKIP mode while the unit is in the name edit mode in step 2. While checking the disc and track numbers on the display window, change the setting by the TRACK and SEL buttons. Press the LIST button lightly again and the unit will enter the name edit mode again.

Capstan Motor Tape Speed Adjustment

Procedure:

1. Put the set into the FWD PB mode.



test tape
WS-48A
(3 kHz, 0 dB)
set
47kΩ
speed checker
or
frequency counter
+
LINE OUT
CNP906
① L-CH
③ R-CH

Specification: Constant speed

Speed checker	Frequency counter
$-$ 1.5 to +2.5%	3,000 $^{+75}_{-45}$ Hz

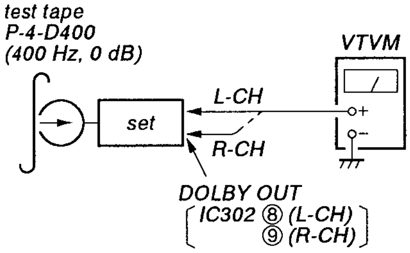
Adjust so that the frequency difference between the FWD and REV modes is within 1.5% (45 dB).

Adjustment Location: Capstan/Reel Motor

DOLBY NR Level Adjustment (Except U220)

Setting:

DOLBY NR switch: OFF
METAL switch: OFF



test tape
P-4-D400
(400 Hz, 0 dB)
set
L-CH
R-CH
VTVM
+
−
DOLBY OUT
IC302 ⑧ (L-CH)
⑨ (R-CH)

Procedure:

1. Put the set into the FWD PB mode.
2. Adjust RV301 (L-CH) and so that VTVM reading is $-$ 6 ± 1.5 dB .
3. Put the set into the FWD PB mode.
4. Adjust RV401 (L-CH) and so that VTVM reading is $-$ 6 ± 1.5 dB .
   ($-$ 6 ± 1.5 dB: approx. 0.35 to 0.54 V)

Adjustment Location: Main board

TUNER SECTION

Cautions during repair

When the front end is defective, replace it by a new one because its internal block is difficult to repair.

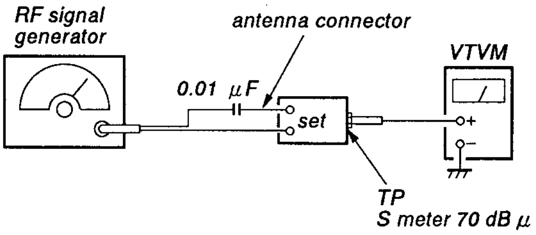
Make the Test Mode.

1. Set the “OFF” condition.
2. Push $\boxed{4}$ button.
3. Push $\boxed{5}$ button.
4. Press $\boxed{1}$ button for two seconds.
   Then the display indicates 5 patterns and stops,
   The test mode is set.

FM Signal Meter (70 dB) Adjustment

Setting:

BAND switch : FM



RF signal
generator
antenna connector
0.01 μF
set
VTVM
+
−
TP
S meter 70 dB μ

Carrier frequency:	*97.9 MHz (US/Canadian)* *98.0 MHz (AEP/E/G)*
Output level:	*70 dB (3.15 mV)*
Modulation:	*1 kHz, 75 kHz deviation*

Procedure:

Adjust with RV2 to 4.0 ± 0.1 V reading on VTVM.

SECTION 2
ADJUSTMENTS

2-1. MECHANICAL ADJUSTMENT

PRECAUTION

1. Wipe the following components with an absorbent cotton cloth moistened with alcohol before adjustment:

PB head	Pinch roller
Idler	Rubber belt
Capstan	

2. Demagnetize the PB head using a head demagnetizer.
3. Be careful not to use a magnetized screwdriver.
4. After the adjustment is completed, lock the adjustment parts using screws.
5. Unless otherwise specified, make adjustments at the specified voltage (14.4 V).

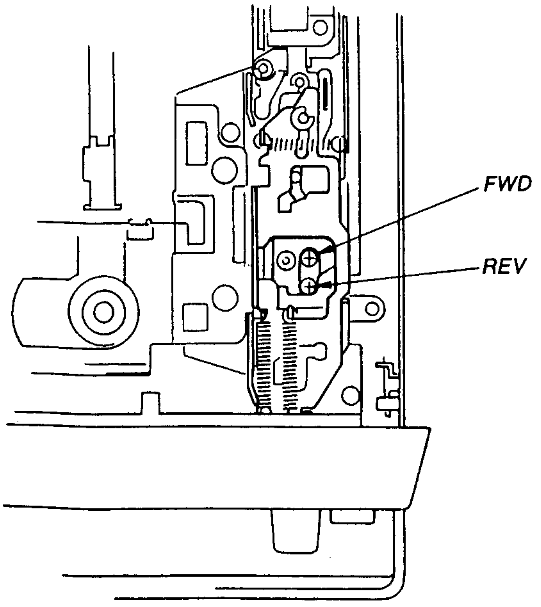
Torque Measurement

Measure the torque at a supply voltage of 14.4 V DC.

Mode	Torque meter	Meter reading
FWD	CQ-102C	25 to 55 g•cm (0.35 to 0.77 oz•inch)
REV	CQ-102RC	25 to 55 g•cm (0.35 to 0.77 oz•inch)
FF, REW	CQ-201B	50 to 150 g•cm (0.7 to 2.1 oz•inch)
Back Tension	CQ-102C	1.5 to 4 g•cm (0.02 to 0.05 oz•inch or less)

0 db = 0.775 V

Adjustment Location:



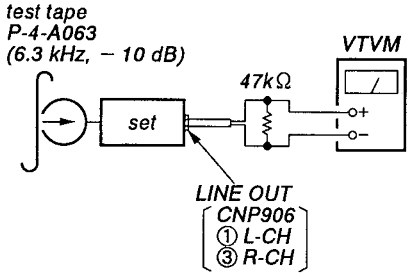
2-2. ELECTRICAL ADJUSTMENTS

DECK SECTION

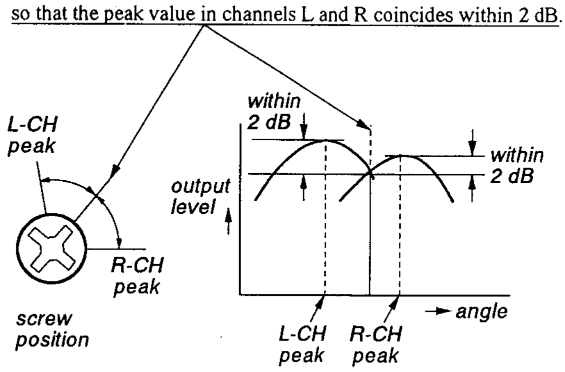
PB Head Vertical Adjustment

Procedure:

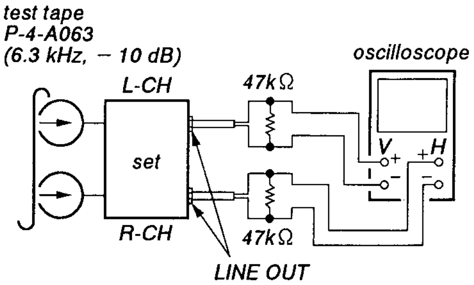
1. Put the set into the FWD PB mode.

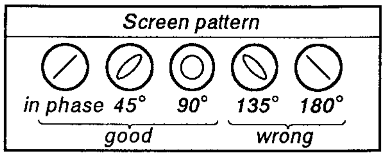

test tape
P-4-A063
(6.3 kHz, – 10 dB)
VTVM
47kΩ
set
LINE OUT
CNP906
① L-CH
③ R-CH

2. Turn the screw and check the output peak value. Adjust the screw so that the peak value in channels L and R coincides within 2 dB.



3. Check the phase in the PB mode.


test tape
P-4-A063
(6.3 kHz, – 10 dB)
oscilloscope
L-CH
47kΩ
set
V
H
R-CH
47kΩ
LINE OUT

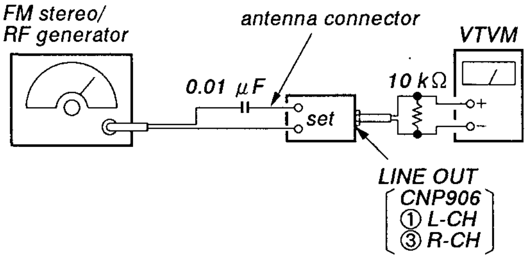

Screen pattern
in phase
45°
90°
135°
180°
good
wrong

4. Repeat the above adjustment for the REV PB mode.
5. Check that output level difference between FWD PB mode and REV PB mode is within 4 dBμ.

FM Stereo Separation (50 dB) Adjustment

Setting:

BAND switch : FM


FM stereo/
RF generator
antenna connector
VTVM
0.01 µF
10 kΩ
set
LINE OUT
CNP906
① L-CH
③ R-CH

Carrier frequency: *97.9 MHz (US/Canadian)*
98.0 MHz (AEP/E/G)
Output level: *50 dB (316 µV)*
Modulation: *main; 1 kHz, 33.75 kHz deviation*
sub; 1 kHz, 33.75 kHz deviation
19 kHz pilot; 7.5 kHz deviation

Procedure:

Adjust RV6 for a best stereo separation at a LINE OUT level of approximately − 10dB.
More than 23 dB is good.

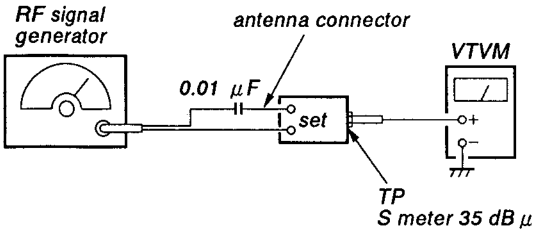
FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV1 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV1 for minimum reading.

L-CH Stereo separation: Ⓐ − Ⓑ
R-CH Stereo separation: Ⓒ − Ⓓ
The separations of both channels should be equal.

FM Signal Meter (35 dB) Adjustment

Setting:

BAND switch : FM


RF signal generator
antenna connector
VTVM
0.01 µF
set
+
–
TP
S meter 35 dB µ

Carrier frequency: 97.9 MHz (US/Canadian)
98.0 MHz (AEP/E/G)
Output level: 35 dB (56.2 µV)
Modulation: 1 kHz, 75 kHz deviation

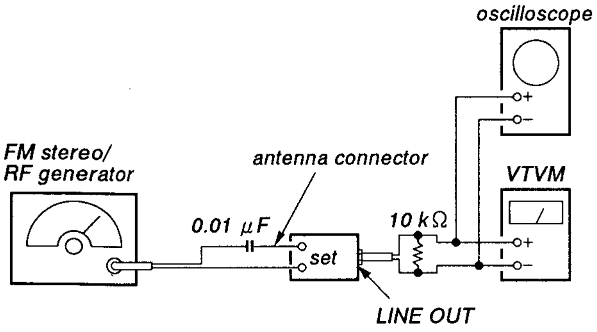
Procedure:

Adjust with RV9 to 2.0 ± 0.1 V (IC201 pin ② voltage value × 0.375 ± 0.1 V) reading on VTVM.

FM Carrier Leakage Adjustment

Setting:

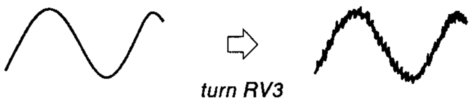
BAND switch : FM


oscilloscope
+
–
FM stereo/ RF generator
antenna connector
VTVM
0.01 µF
10 kΩ
set
+
–
LINE OUT

Carrier frequency: 97.9 MHz (US/Canadian)
98.0 MHz (AEP/E/G)
Output level: 60 dB (1 mV)
Modulation: main; 1 kHz, 33.75 kHz deviation
sub; 1 kHz, 33.75 kHz deviation
19 kHz pilot; 7.5 kHz deviation

Procedure:

1. Check the waveform on the oscilloscope screen becomes as follows when turning RV3.

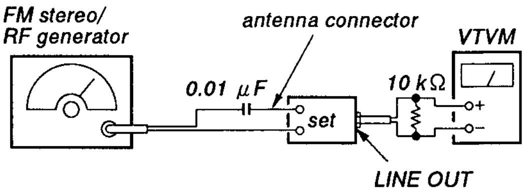


2. Set the modulation 19 kHz pilot.
3. Adjust with RV3 so that the 19 kHz signal becomes minimum on both channels L and R.

FM Stereo Separation (70 dB) Adjustment

Setting:

BAND switch : FM


FM stereo/ RF generator
antenna connector
VTVM
0.01 µF
10 kΩ
set
+
–
LINE OUT

Carrier frequency: 97.9 MHz (US/Canadian)
98.0 MHz (AEP/E/G)
Output level: 70 dB (3.15 mV)
Modulation: main; 1 kHz, 33.75 kHz deviation
sub; 1 kHz, 33.75 kHz deviation
19 kHz pilot; 7.5 kHz deviation

Procedure:

Adjust RV4 for a best stereo separation at a LINE OUT.
More than 28 dB is good.

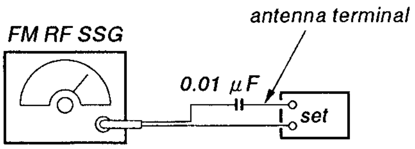
FM stereo signal generator output channel	VTVM connection	VTVM reading (dB)
L-CH	L-CH	Ⓐ
R-CH	L-CH	Ⓑ Adjust RV1 for minimum reading.
R-CH	R-CH	Ⓒ
L-CH	R-CH	Ⓓ Adjust RV1 for minimum reading.

L-CH Stereo separation: Ⓐ – Ⓑ
R-CH Stereo separation: Ⓒ – Ⓓ
The separations of both channels should be equal.

FM Auto Scan/Stop Level Adjustment

Setting:

BAND switch : FM



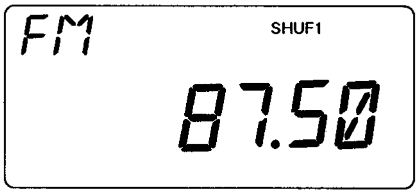
FM RF SSG
antenna terminal
0.01 μF
set

Carrier frequency: 97.9 MHz (US/Canadian)
98.0 MHz (AEP/E/G)
Output level: 25 dB (18 μV) (Except RDS model)
22 dB (13 μV) (RDS model)
Mode: mono, unmodulated

Procedure:

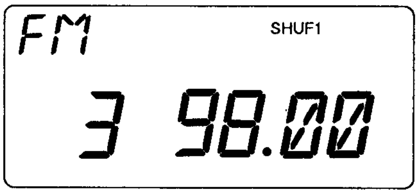
1. Set to the test mode. (See page 18.)
2. Push the tuner button and set to FM.

Display window



FM
SHUF1
87.50

3. Push the preset 3 button.



FM
SHUF1
3 98.00

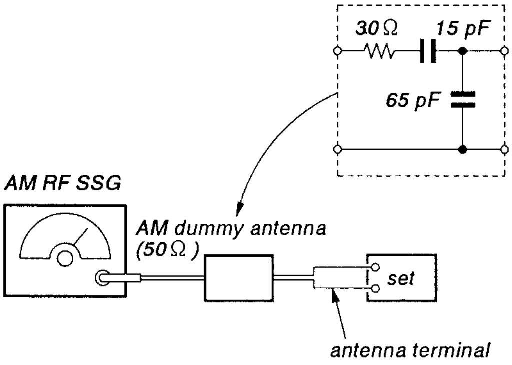
4. Adjust with the volume on TU10 so that the "FM" indication turns to "FM0" indication on the display windows.

AM (MW) Auto Scan/Stop Level Adjustment

Note: This adjustment should be made after FM auto scan stop level adjustment is completed.

Setting:

BAND switch : AM (MW)



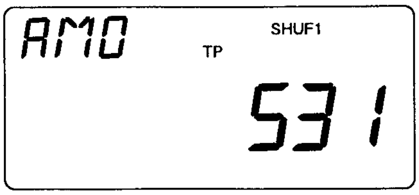
30Ω
15 pF
65 pF
AM RF SSG
AM dummy antenna (50Ω)
set
antenna terminal

Frequency: 1,000 kHz (US/Canadian/E)
999 kHz (AEP/E/G)
Output level: 30 dB (31.8 μV)

Procedure:

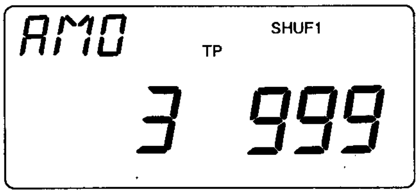
1. Set to the test mode. (See page 18.)
2. Push the tuner button and set to AM (MW).

Display window (EX.: 2 band model 9 kHz step when 10 kHz step; 530)



AM0
TP
SHUF1
531

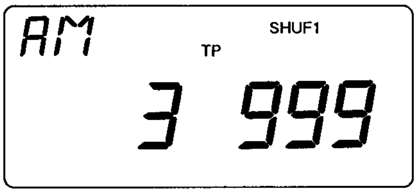
3. Push the preset 3 button.



AM0
TP
SHUF1
3 999

(EX.: 2 band model 9 kHz step, when 10 kHz step; 1000)

4. Press M. SCAN BTM button for about 2 seconds.
   Then "0" of AM0 (or MW0) and "TP" indications are off.



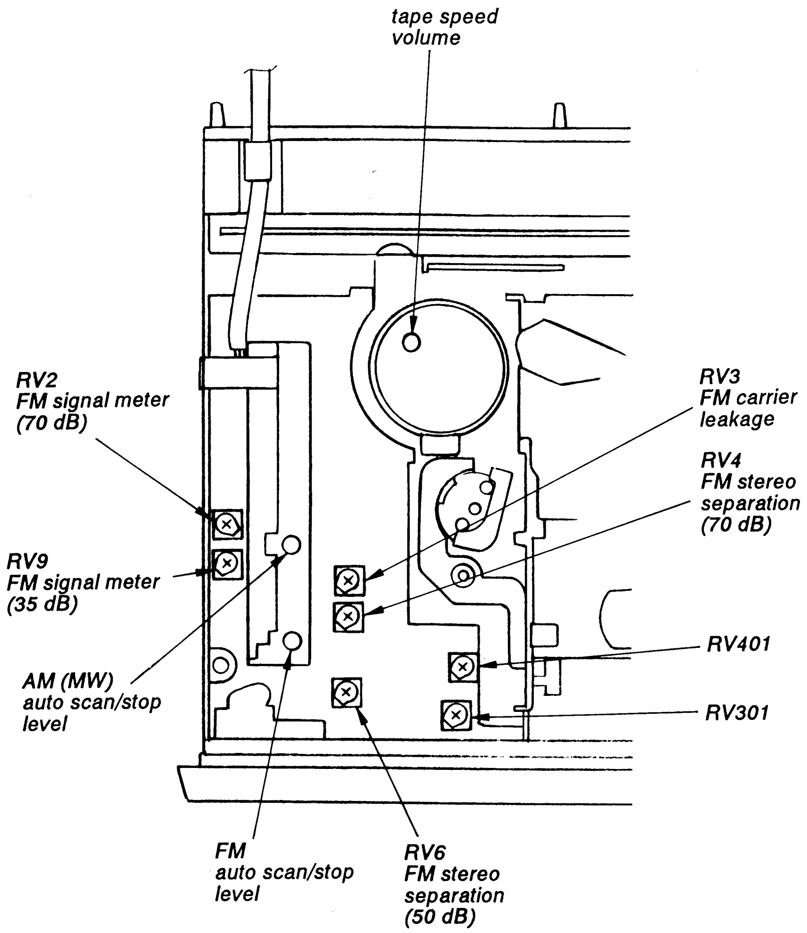
AM
TP
SHUF1
3 999

(EX.: 2 band model 9 kHz step, when 10 kHz step; 1000)

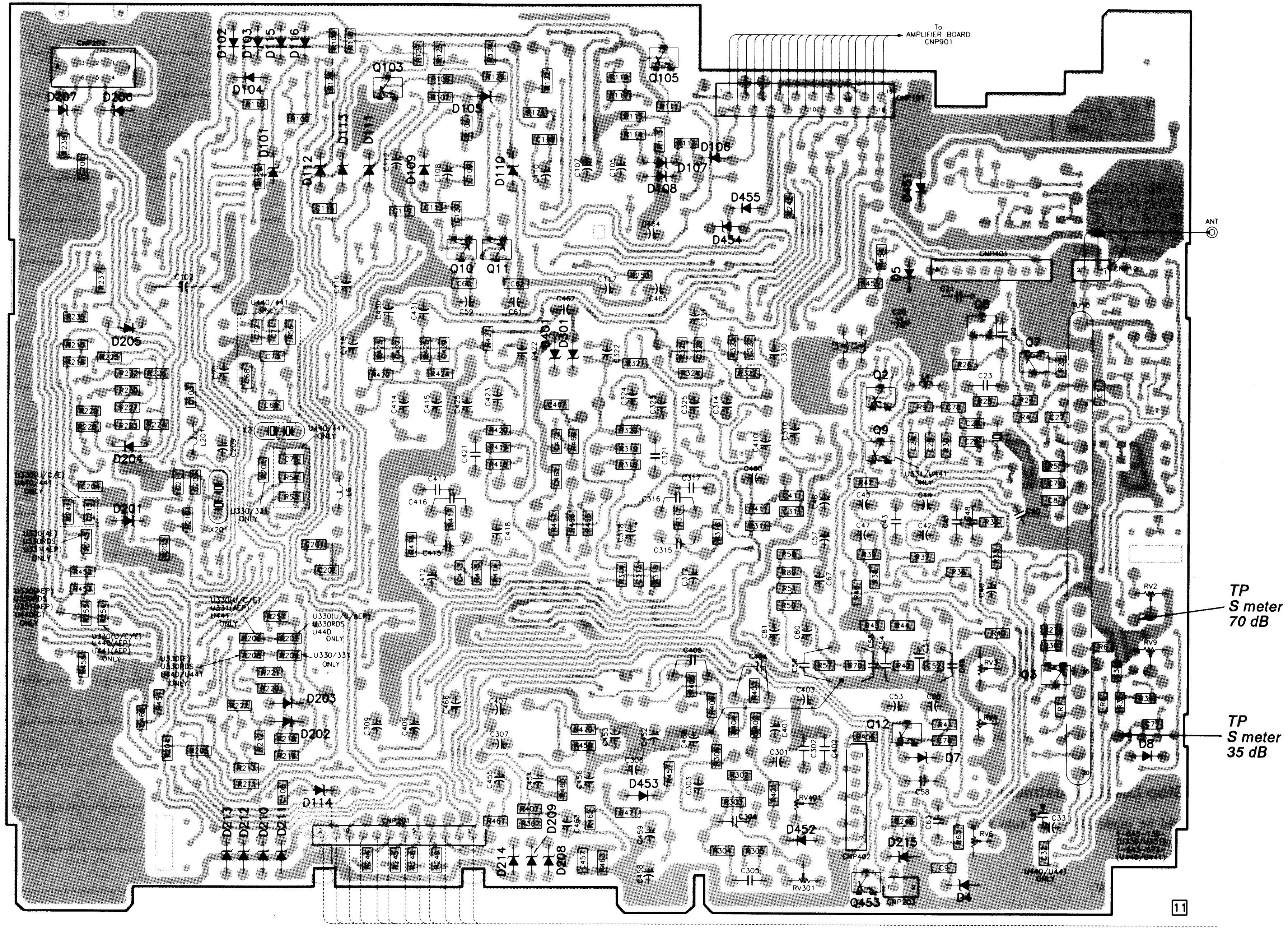
5. Adjust with the volume on TU10 so that the "AM (or MW)" indication turns to "AM0 (or MW0)" indication on the display windows.

MEMO

- **Adjusting Parts Location**


tape speed volume
RV2
FM signal meter
(70 dB)
RV9
FM signal meter
(35 dB)
AM (MW)
auto scan/stop
level
FM
auto scan/stop
level
RV6
FM stereo
separation
(50 dB)
RV3
FM carrier
leakage
RV4
FM stereo
separation
(70 dB)
RV401
RV301

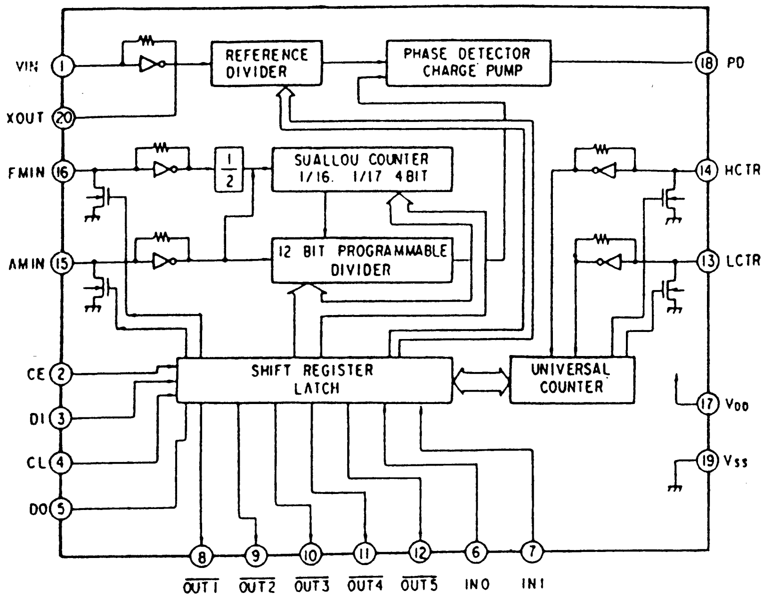
[MAIN BOARD](CONDUCTOR SIDE)


To
AMPLIFIER BOARD
CNP901
ANT
TP
S meter
70 dB
TP
S meter
35 dB
RV2
RV9
RV3
RV4
RV6
RV401
RV301
CNP101
CNP201
CNP202
CNP401
CNP402
CNP203
Q103
Q105
Q10
Q11
Q2
Q7
Q8
Q9
Q12
Q453
D101
D102
D103
D104
D105
D106
D107
D108
D109
D110
D111
D112
D113
D114
D115
D116
D201
D202
D203
D204
D205
D206
D207
D208
D209
D210
D211
D212
D213
D214
D215
D301
D401
D452
D453
D454
D455
D4
D5
D7
D8
11

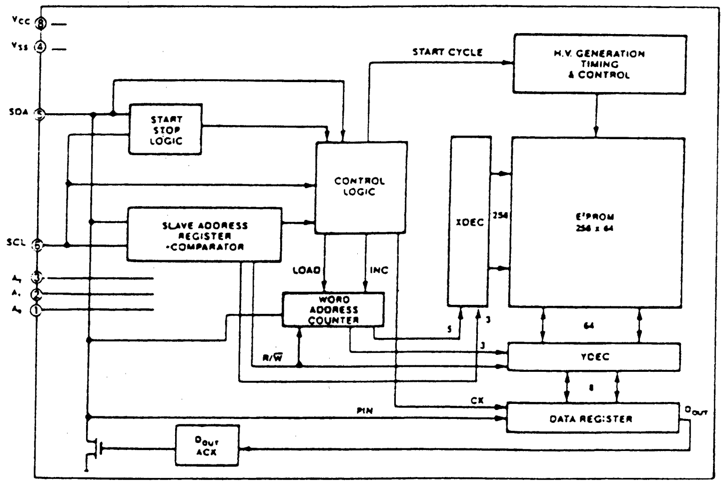
SECTION 3
DIAGRAMS

• IC Block Diagrams

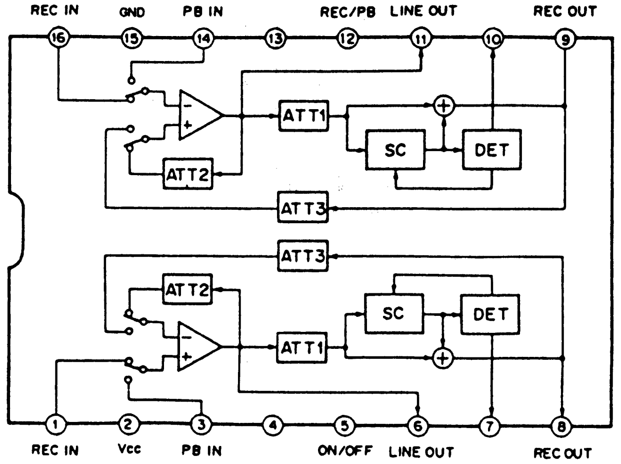
IC20 LC7216M


VIN ①
XOUT ⑳
FMIN ⑯
AMIN ⑮
CE ②
DI ③
CL ④
DO ⑤
REFERENCE DIVIDER
PHASE DETECTOR CHARGE PUMP
⑱ PD
1/2
SUALLOU COUNTER 1/16, 1/17 4BIT
⑭ HCTR
12 BIT PROGRAMMABLE DIVIDER
⑬ LCTR
SHIFT REGISTER LATCH
UNIVERSAL COUNTER
⑰ VDD
⑲ VSS
⑧ OUT1
⑨ OUT2
⑩ OUT3
⑪ OUT4
⑫ OUT5
⑥ IN0
⑦ IN1

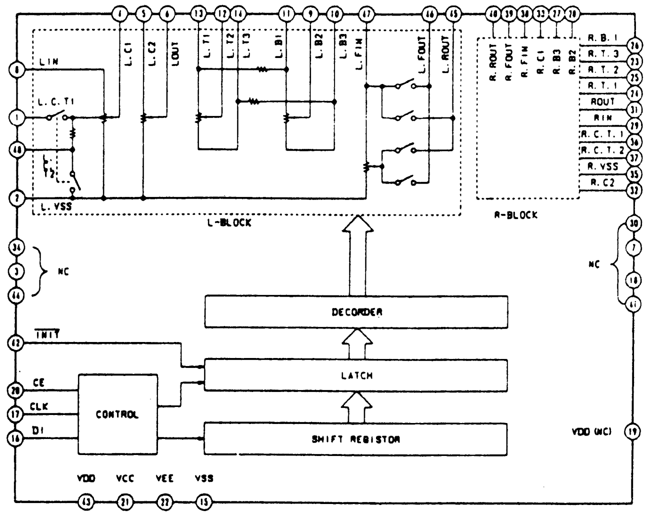
IC202 X24C16SI


VCC ⑧
VSS ④
SDA ⑤
SCL ⑥
A2 ③
A1 ②
A0 ①
START STOP LOGIC
START CYCLE
H.V. GENERATION TIMING & CONTROL
CONTROL LOGIC
SLAVE ADDRESS REGISTER •COMPARATOR
LOAD
INC
WORD ADDRESS COUNTER
XDEC
256
E²PROM 256 x 64
5
3
3
64
R/W
YDEC
8
CK
PIN
DATA REGISTER
DOUT
DOUT ACK

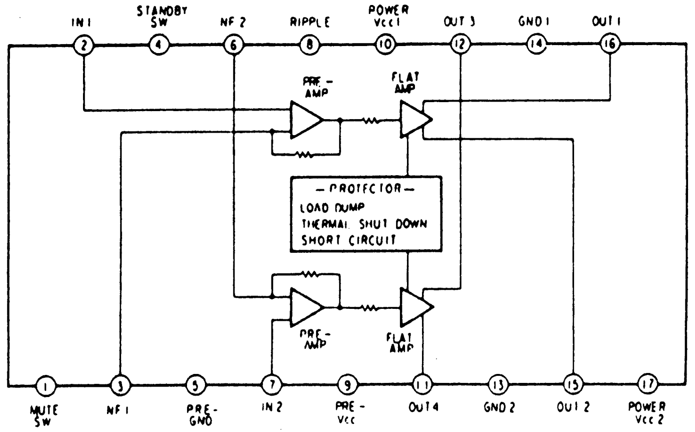
IC302 CXA1102M


REC IN ⑯
GND ⑮
PB IN ⑭
⑬
REC/PB ⑫
LINE OUT ⑪
⑩
REC OUT ⑨
ATT1
SC
DET
ATT2
ATT3
ATT3
ATT2
SC
DET
ATT1
REC IN ①
Vcc ②
PB IN ③
④
ON/OFF ⑤
LINE OUT ⑥
⑦
REC OUT ⑧

IC305 LC7537AN

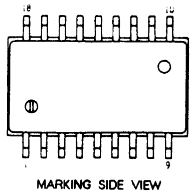

L. C1 ④
L. C2 ⑤
LOUT ⑥
L. T1 ⑬
L. T2 ⑫
L. T3 ⑭
L. B1 ⑪
L. B2 ⑨
L. B3 ⑩
L. FIN ㊼
L. FOUT ㊻
L. ROUT ㊺
R. ROUT ㊵
R. FOUT ㊴
R. FIN ㊳
R. C1 ㉝
R. B3 ㉗
R. B2 ㉘
L IN ⑧
L. C. T1 ①
L. C. T2 ㊽
L. VSS ②
L-BLOCK
R. B. 1 ㉖
R. T. 3 ㉓
R. T. 2 ㉕
R. T. 1 ㉔
ROUT ㉛
RIN ㉙
R. C. T. 1 ㊱
R. C. T. 2 ㊲
R. VSS ㉟
R. C2 ㉜
R-BLOCK
NC ㉞ ③ ㊹
NC ㉚ ⑦ ⑱ ㊶
DECORDER
INIT ㊷
LATCH
CE ⑳
CLK ⑰
DI ⑯
CONTROL
SHIFT REGISTOR
VDD (NC) ⑲
VDD ㊸
VCC ㉑
VEE ㉒
VSS ⑮

IC801, IC901 TA8215H

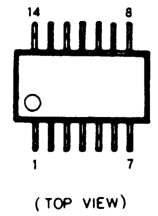

IN1 ②
STANDBY SW ④
NF2 ⑥
RIPPLE ⑧
POWER Vcc1 ⑩
OUT3 ⑫
GND1 ⑭
OUT1 ⑯
PRE-AMP
FLAT AMP
—PROTECTOR—
LOAD DUMP
THERMAL SHUT DOWN
SHORT CIRCUIT
PRE-AMP
FLAT AMP
MUTE SW ①
NF1 ③
PRE-GND ⑤
IN2 ⑦
PRE-Vcc ⑨
OUT4 ⑪
GND2 ⑬
OUT2 ⑮
POWER Vcc2 ⑰

• Semiconductor Lead Layouts

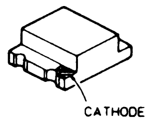
LC7071NM


18
10
1
9
MARKING SIDE VIEW

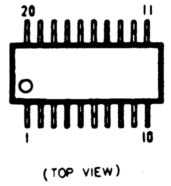
X24C16SI


14
8
1
7
(TOP VIEW)

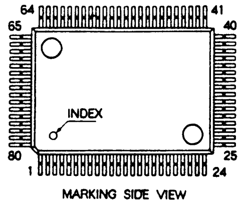
CL-155Y/PG-CD



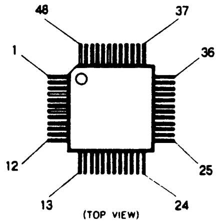
LC7216M


20
11
1
10
(TOP VIEW)

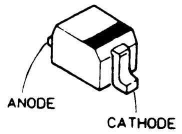
TC9240F


64
41
65
40
INDEX
80
25
1
24
MARKING SIDE VIEW

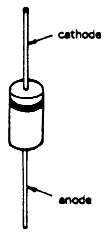
LC7537AN


48
37
1
36
12
25
13
24
(TOP VIEW)

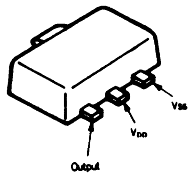
DTZ5.1C
DTZ7.5B


ANODE
CATHODE

1S2472

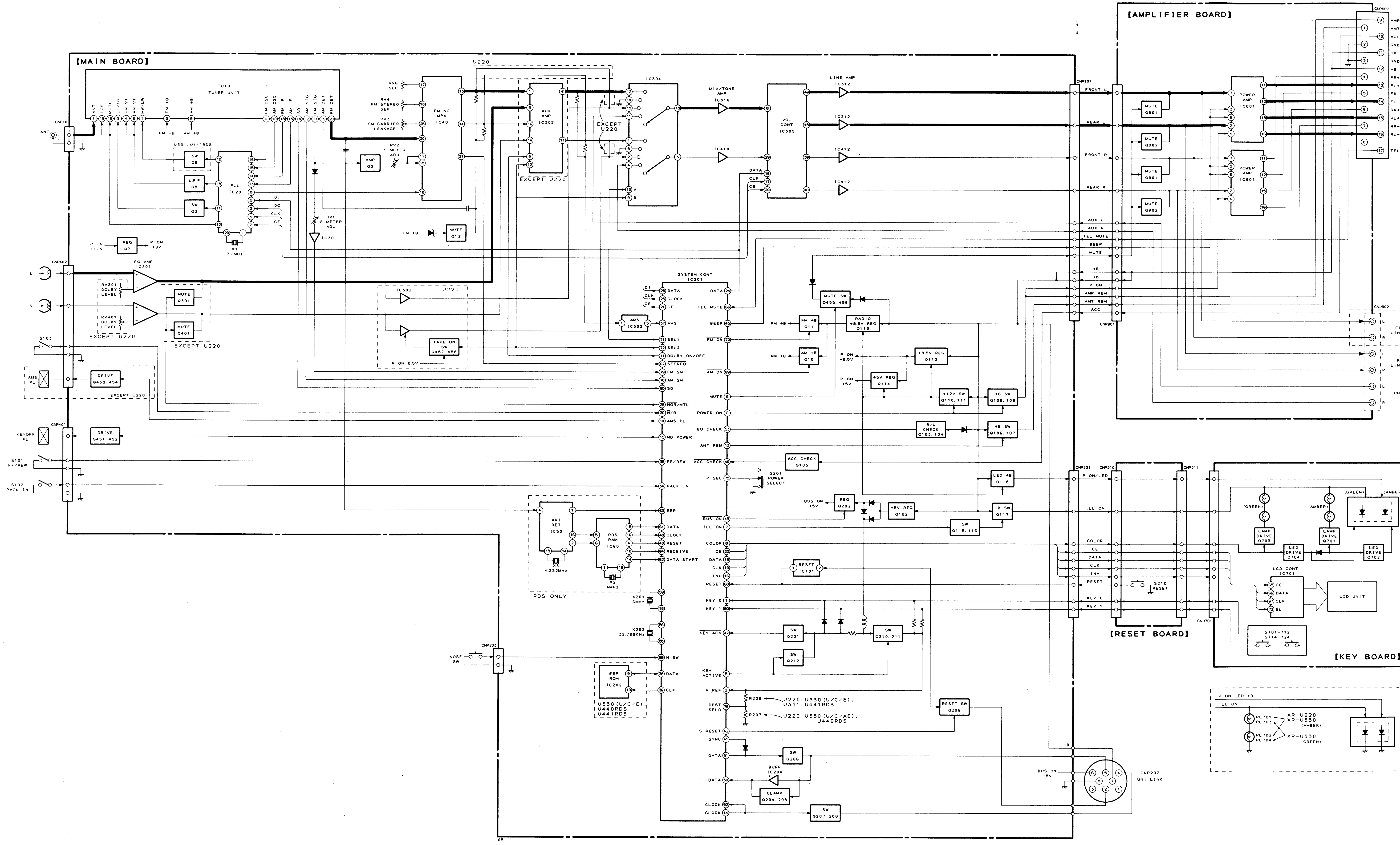

cathode
anode

S-8054HN-CB-S

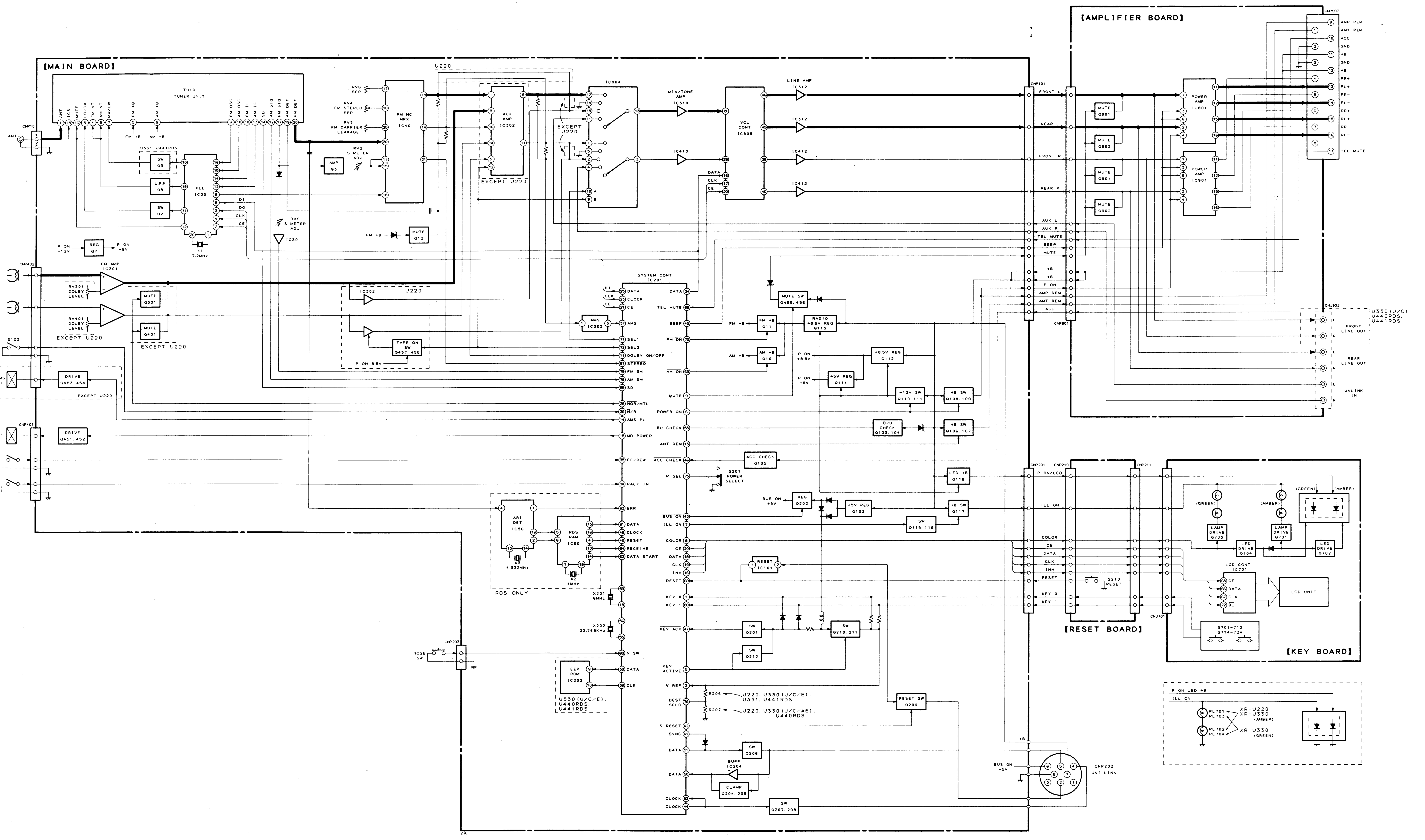

VSS
VDD
Output

3-1. BLOC

3-1. BLOCK DIAGRAM


[MAIN BOARD]
[AMPLIFIER BOARD]
[RESET BOARD]
[KEY BOARD]
TU10 TUNER UNIT
PLL IC20
X1 7.2MHz
SW Q9
LPF Q8
SW Q2
REG Q7
P ON +12V
P ON +9V
U331, U441RDS
FM NC MPX IC40
RV6 SEP
RV4 FM STEREO SEP
RV3 FM CARRIER LEAKAGE
RV2 S METER ADJ
RV9 S METER ADJ
AMP Q3
IC30
MUTE Q12
FM +B
AUX AMP IC302
EXCEPT U220
U220
IC304
MIX/TONE AMP IC310
IC410
VOL CONT IC305
LINE AMP IC312
IC312
IC412
IC412
EQ AMP IC301
RV301 DOLBY LEVEL
RV401 DOLBY LEVEL
MUTE Q301
MUTE Q401
IC302
TAPE ON SW Q457, 458
P ON 8.5V
AMS IC303
SYSTEM CONT IC201
DRIVE Q453, 454
DRIVE Q451, 452
ARI DET IC50
RDS RAM IC60
X3 4.332MHz
X2 4MHz
RDS ONLY
X201 6MHz
X202 32.768kHz
EEP ROM IC202
U330(U/C/E), U440RDS, U441RDS
MUTE SW Q455, 456
RADIO +8.5V REG Q113
FM +B Q11
AM +B Q10
+8.5V REG Q112
+5V REG Q114
+12V SW Q110, 111
+B SW Q108, 109
B/U CHECK Q103, 104
+B SW Q106, 107
ACC CHECK Q105
S201 POWER SELECT
LED +B Q118
REG Q202
+5V REG Q102
+B SW Q117
SW Q115, 116
RESET IC101
SW Q201
SW Q212
SW Q210, 211
RESET SW Q209
R206 U220, U330(U/C/E), U331, U441RDS
R207 U220, U330(U/C/AE), U440RDS
SW Q206
BUFF IC204
CLAMP Q204, 205
SW Q207, 208
CNP202 UNI LINK
BUS ON +5V
NOSE SW
KEYOFF PL
S101 FF/REW
S102 PACK IN
S103
AMS PL
ANT
CNP101
CNP901
CNP201
CNP210
CNP211
CNJ701
CNJ902
CNP902
POWER AMP IC801
POWER AMP IC901
MUTE Q801
MUTE Q802
MUTE Q901
MUTE Q902
FRONT L
REAR L
FRONT R
REAR R
AUX L
AUX R
TEL MUTE
BEEP
MUTE
+B
P ON
AMP REM
AMT REM
ACC
P ON/LED
ILL ON
COLOR
CE
DATA
CLK
INH
RESET
KEY 0
KEY 1
S210 RESET
LAMP DRIVE Q703
LAMP DRIVE Q701
LED DRIVE Q704
LED DRIVE Q702
(GREEN)
(AMBER)
LCD CONT IC701
LCD UNIT
S701-712 S714-724
P ON LED +B
ILL ON
PL701 PL703 XR-U220 XR-U330 (AMBER)
PL702 PL704 XR-U330 (GREEN)

DIAGRAM


[MAIN BOARD]
[AMPLIFIER BOARD]
[RESET BOARD]
[KEY BOARD]
TU10 TUNER UNIT
ANT
CNP10
PLL IC20
X1 7.2MHz
U331, U441RDS
SW Q9
LPF Q8
SW Q2
REG Q7
P ON +12V
P ON +9V
RV6 SEP
RV4 FM STEREO SEP
RV3 FM CARRIER LEAKAGE
FM NC MPX IC40
RV2 S METER ADJ
AMP Q3
RV9 S METER ADJ
IC30
FM +B
MUTE Q12
U220
AUX AMP IC302
EXCEPT U220
IC304
MIX/TONE AMP IC310
IC410
VOL CONT IC305
DATA
CLK
CE
LINE AMP IC312
IC312
IC412
IC412
CNP101
FRONT L
REAR L
FRONT R
REAR R
AUX L
AUX R
TEL MUTE
BEEP
MUTE
+B
+B
P ON
AMP REM
AMT REM
ACC
CNP901
MUTE Q801
MUTE Q802
MUTE Q901
MUTE Q902
POWER AMP IC801
POWER AMP IC901
CNP902
AMP REM
AMT REM
ACC
GND
+B
GND
+B
FR+
FL+
FR-
FL-
RR+
RL+
RR-
RL-
TEL MUTE
CNJ902
U330(U/C), U440RDS, U441RDS
FRONT LINE OUT
REAR LINE OUT
UNILINK IN
CNP402
EQ AMP IC301
RV301 DOLBY LEVEL
RV401 DOLBY LEVEL
MUTE Q301
MUTE Q401
EXCEPT U220
S103
DRIVE Q453, 454
CNP401
DRIVE Q451, 452
IC302
TAPE ON SW Q457, 458
P ON 8.5V
AMS IC303
SYSTEM CONT IC201
DI
DO
DATA
CLOCK
CE
AMS
SEL1
SEL2
DOLBY ON/OFF
STEREO
FM SM
AM SM
SD
NOR/MTL
N/R
AMS PL
MD POWER
FF/REW
PACK IN
ERR
DATA
CLOCK
RESET
RECEIVE
DATA START
X201 6MHz
X202 32.768KHz
N SW
DATA
CLK
ARI DET IC50
RDS RAM IC60
X3 4.332MHz
X2 4MHz
RDS ONLY
EEP ROM IC202
U330(U/C/E) U440RDS, U441RDS
CNP203
NOSE SW
DATA
TEL MUTE
BEEP
FM ON
AM ON
MUTE
POWER ON
BU CHECK
ANT REM
ACC CHECK
P SEL
BUS ON
ILL ON
COLOR
CE
DATA
CLK
INH
RESET
KEY 0
KEY 1
KEY ACK
KEY ACTIVE
V REF
DEST SELO
S RESET
SYNC
DATA
DATA
CLOCK
CLOCK
MUTE SW Q455, 456
RADIO +8.5V REG Q113
FM +B Q11
AM +B Q10
+8.5V REG Q112
P ON +8.5V
P ON +5V
+5V REG Q114
+12V SW Q110, 111
+B SW Q108, 109
B/U CHECK Q103, 104
+B SW Q106, 107
ACC CHECK Q105
S201 POWER SELECT
LED +B Q118
BUS ON +5V
REG Q202
+5V REG Q102
+B SW Q117
SW Q115, 116
RESET IC101
SW Q201
SW Q210, 211
SW Q212
R206
U220, U330(U/C/E), U331, U441RDS
R207
U220, U330(U/C/AE), U440RDS
RESET SW Q209
SW Q206
BUFF IC204
CLAMP Q204, 205
SW Q207, 208
BUS ON +5V
CNP202 UNI LINK
CNP201
CNP210
CNP211
CNJ701
P ON/LED
ILL ON
S210 RESET
(GREEN)
(AMBER)
LAMP DRIVE Q703
LAMP DRIVE Q701
LED DRIVE Q704
LED DRIVE Q702
LCD CONT IC701
LCD UNIT
S701-712 S714-724
P ON LED +B
ILL ON
PL701 PL703 XR-U220 XR-U330 (AMBER)
PL702 PL704 XR-U330 (GREEN)

3-2. PRINTED WIRING BOARDS (MAIN SECTION) XR-U220

- See Page 26 for Semiconductor Lead Layouts.

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D4	H-19	IC305	E-6
D5	C-18	IC310	F-5
D7	G-18	IC311	E-5
D8	G-20	IC312	D-5
D101	B-13	IC410	F-6
D102	A-13	IC411	E-7
D103	A-13	IC412	D-7
D104	B-13		
D105	B-15	Q2	D-18
D106	B-17	Q3	F-19
D107	B-16	Q7	D-19
D108	B-16	Q8	D-19
D109	B-14	Q10	C-14
D110	B-15	Q11	C-15
D111	B-14	Q12	G-18
D112	B-13	Q102	B-8
D113	B-14	Q103	B-14
D114	G-13	Q104	B-8
D115	A-13	Q105	A-16
D116	A-13	Q106	B-5
D201	E-12	Q107	B-6
D202	G-13	Q108	A-5
D203	G-13	Q109	A-6
D204	E-12	Q110	B-6
D205	D-12	Q111	A-6
D206	B-12	Q112	A-7
D207	B-11	Q113	A-6
D208	H-15	Q114	B-7
D209	H-15	Q115	B-7
D210	H-13	Q116	B-7
D211	H-13	Q117	A-8
D212	H-13	Q118	A-7
D213	H-13	Q201	G-8
D214	H-15	Q202	D-10
D215	H-18	Q204	D-10
D301	D-15	Q205	D-10
D401	D-15	Q206	D-9
D451	B-18	Q207	E-10
D453	G-16	Q208	D-10
D454	C-17	Q209	D-10
D455	C-17	Q210	G-9
		Q211	G-9
IC20	D-3	Q212	G-8
IC30	G-1	Q401	G-5
IC40	F-3	Q451	C-3
IC101	D-9	Q452	C-3
IC201	F-9	Q455	C-5
IC204	D-9	Q456	C-5
IC301	G-4	Q457	G-5
IC302	G-6	Q458	G-16
IC304	E-4		

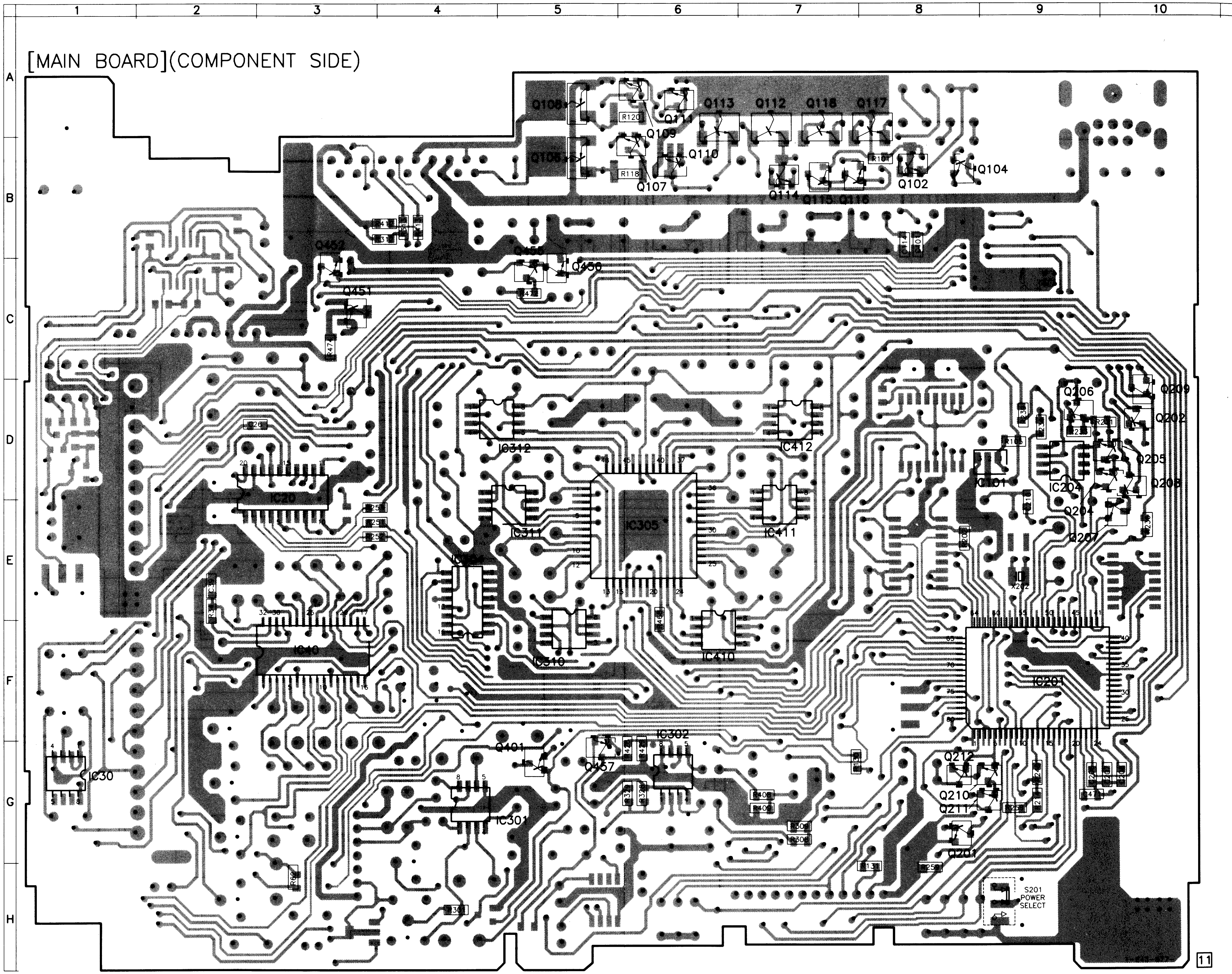
Note:

- ○—— : parts extracted from the component side.
- ● : Through hole.
- ▨ : Pattern from the side which enables seeing.

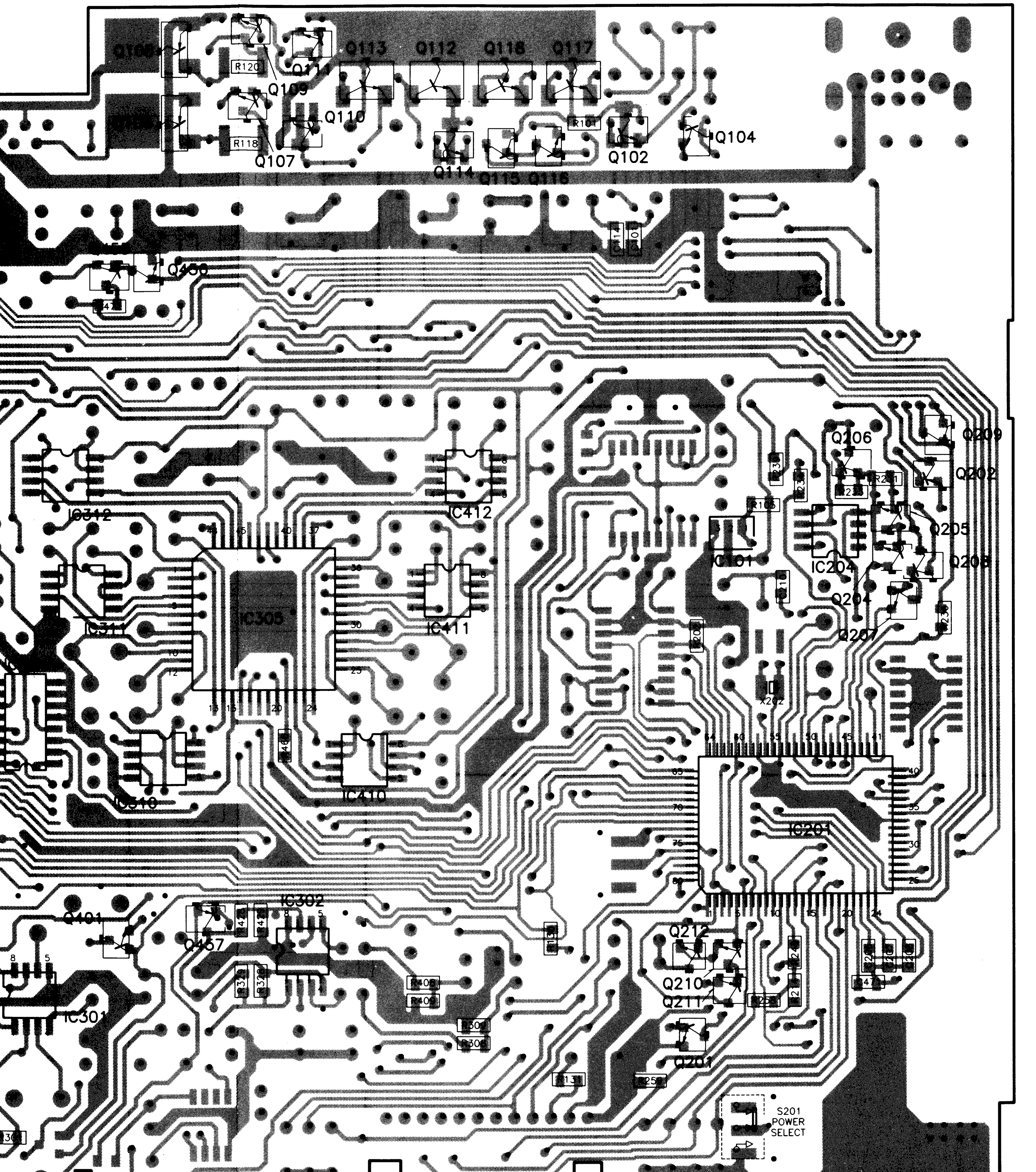
(The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

- ▨ : Pattern of the rear side.

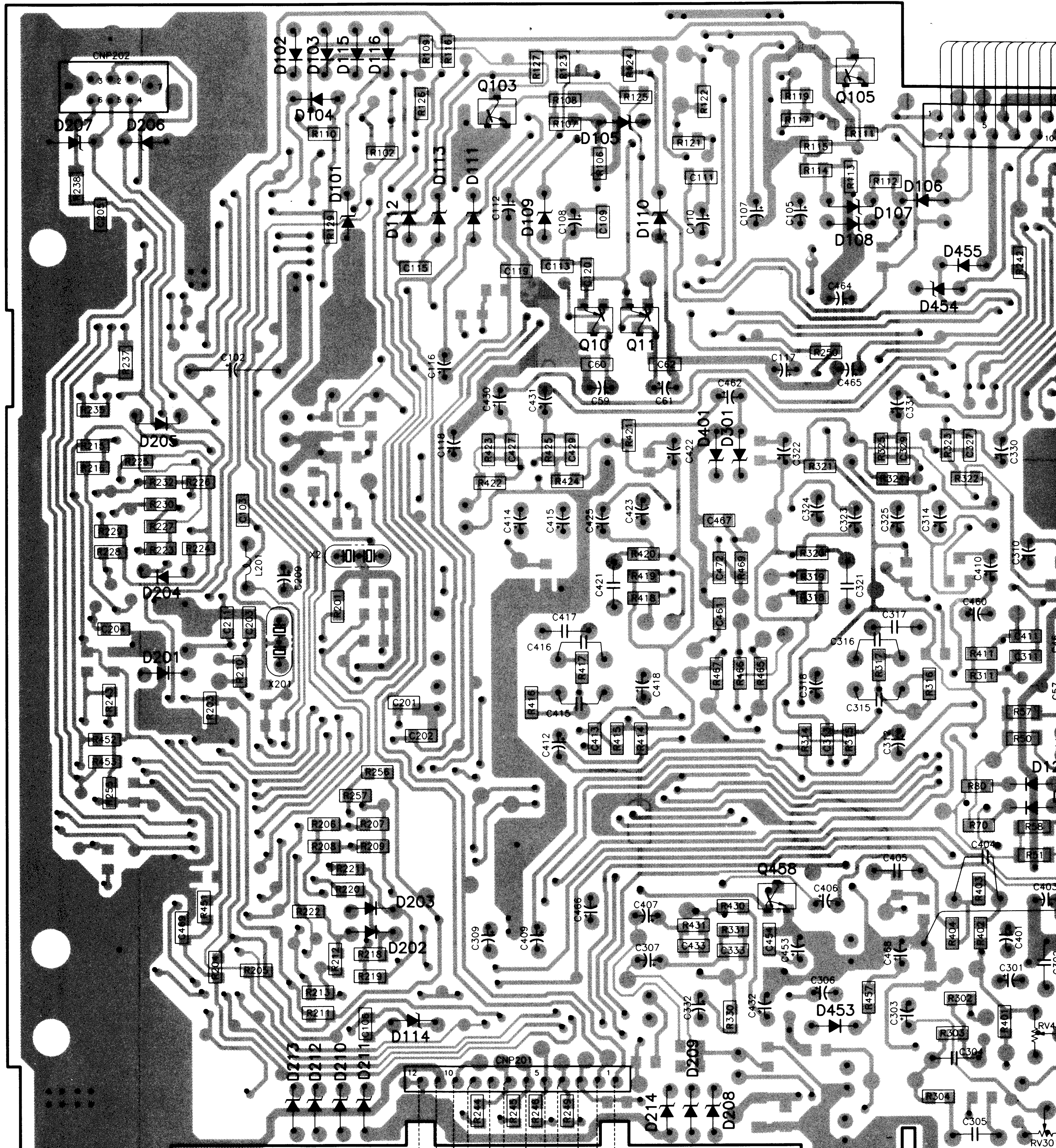

1
2
3
4
5
6
7
8
9
10
A
B
C
D
E
F
G
H
[MAIN BOARD](COMPONENT SIDE)
Q108
Q106
Q111
Q109
Q110
Q107
Q113
Q112
Q118
Q117
Q114
Q115
Q116
Q102
Q104
R120
R118
R101
Q452
Q455
Q456
Q451
Q206
Q209
Q202
Q205
Q208
Q204
Q207
IC312
IC412
IC20
IC311
IC305
IC411
IC101
IC204
IC304
IC40
IC310
IC410
IC201
IC302
Q401
Q457
IC30
IC301
Q212
Q210
Q211
Q201
X202
R131
S201
POWER
SELECT
11
05

5 6 7 8 9 10 11 12 13 14 15 16 17


Q108
Q106
R120
Q111
Q113
Q112
Q118
Q117
Q109
Q110
R118
Q107
Q114
Q115
Q116
Q102
R101
Q104
Q456
IC312
IC412
IC305
IC311
IC411
IC310
IC410
Q206
Q209
Q202
Q205
Q208
IC101
IC204
Q204
Q207
X202
IC201
Q401
Q457
IC302
IC301
Q212
Q210
Q211
Q201
S201
POWER
SELECT
11

-32-

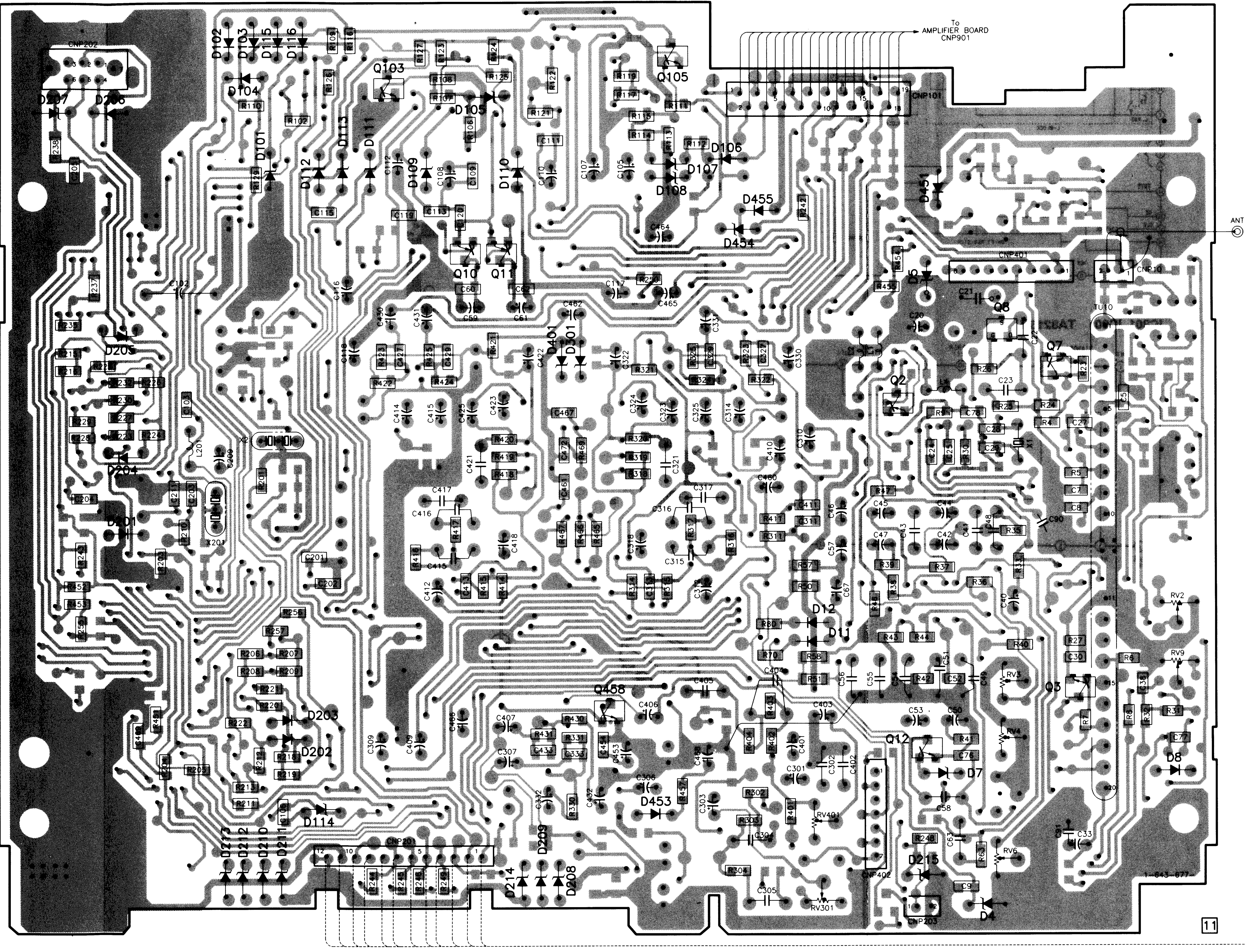
[MAIN BOARD](CONDUCTOR SIDE)


CNP202
D207
D206
D102
D103
D115
D116
D104
D101
D112
D113
D111
Q103
D105
D109
D110
Q105
D106
D107
D108
D455
D454
Q10
Q11
D205
D204
D201
X201
D401
D301
Q458
D203
D202
D114
D453
D213
D212
D210
D211
CNP201
D214
D209
D208

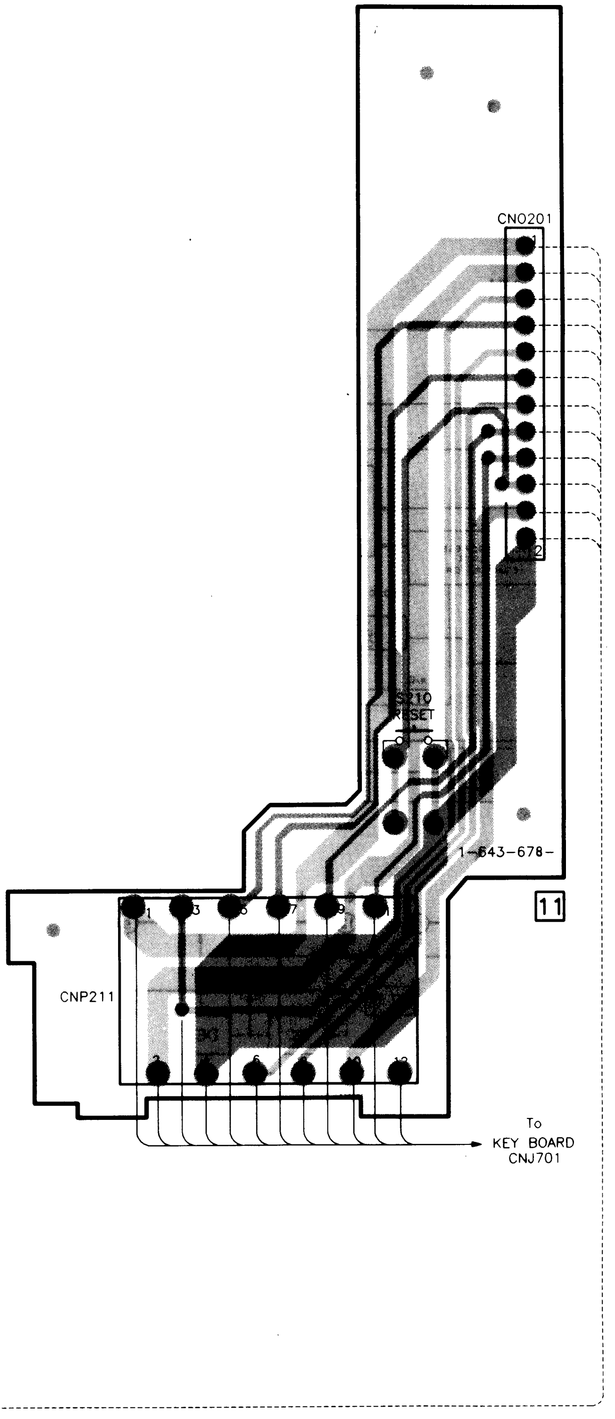
-33-

11 12 13 14 15 16 17 18 19 20 21 22 23

[MAIN BOARD](CONDUCTOR SIDE)

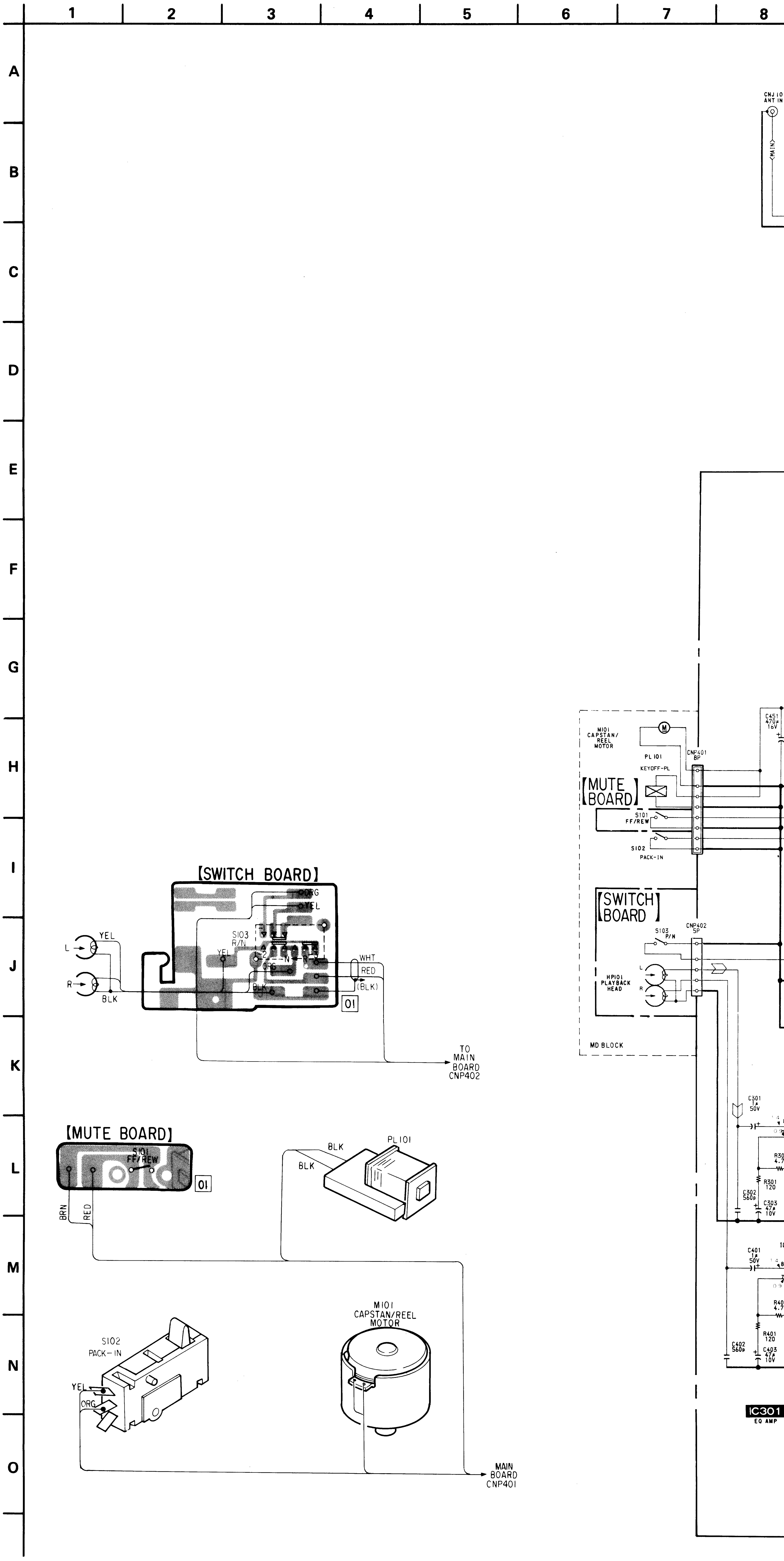

To
AMPLIFIER BOARD
CNP901
CNP101
CNP202
CNP401
CNP10
CNP201
CNP402
CNP203
ANT
1-643-677-
11

[RESET BOARD]


CN0201
S219
RESET
1-643-678-
11
CNP211
To
KEY BOARD
CNJ701

3-3. SCHEMATIC DIAGRAM (MAIN SECTION)

- See page 25 for IC Block Diagrams.


1
2
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6
7
8
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
CNJ10
ANT IN
<MAIN>
[SWITCH BOARD]
ORG
YEL
S103
R/N
YEL
ORG
BLK
WHT
RED
(BLK)
01
L
R
YEL
BLK
TO MAIN BOARD CNP402
[MUTE BOARD]
S101
FF/REW
01
BRN
RED
BLK
BLK
PL101
S102
PACK-IN
YEL
ORG
M101
CAPSTAN/REEL MOTOR
MAIN BOARD CNP401
M101
CAPSTAN/REEL MOTOR
PL101
KEYOFF-PL
CNP401
8P
[MUTE BOARD]
S101
FF/REW
S102
PACK-IN
[SWITCH BOARD]
S103
P/N
CNP402
5P
HP101
PLAYBACK HEAD
L
R
MD BLOCK
C451
470µ
16V
C301
1µ
50V
R301
120
C302
560p
C303
47µ
10V
C401
1µ
50V
R401
120
C402
560p
C403
47µ
10V
IC301
EQ AMP

Note:

- All capacitors are in µF unless otherwise noted. pF: µµF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- % : indicates tolerance.
- △ : internal component.
- ▬ : B + Line.
- ▭ : adjustment for repair.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from BAT and ACC terminals.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.

  no mark : Common

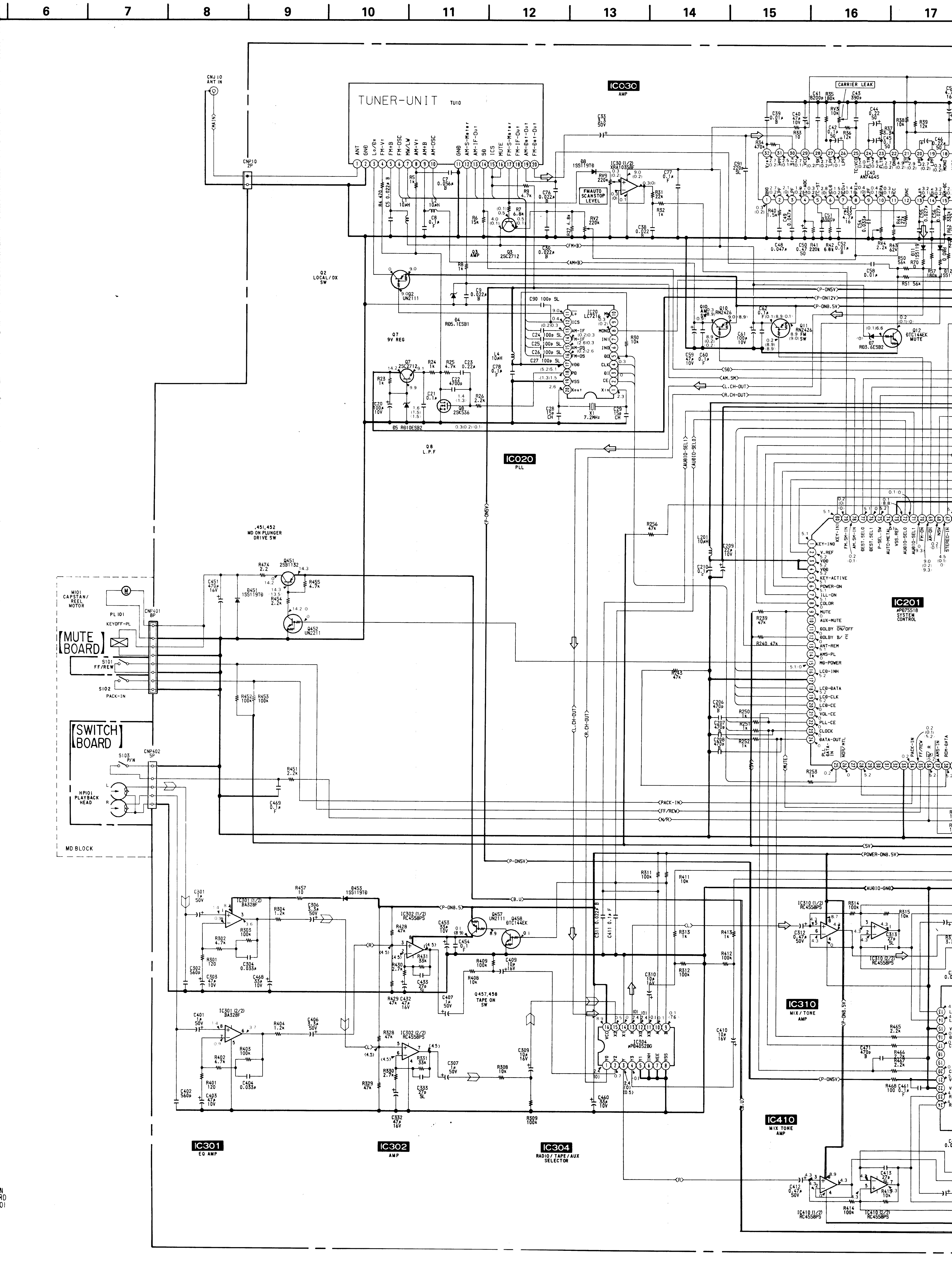
  ( ) : AM

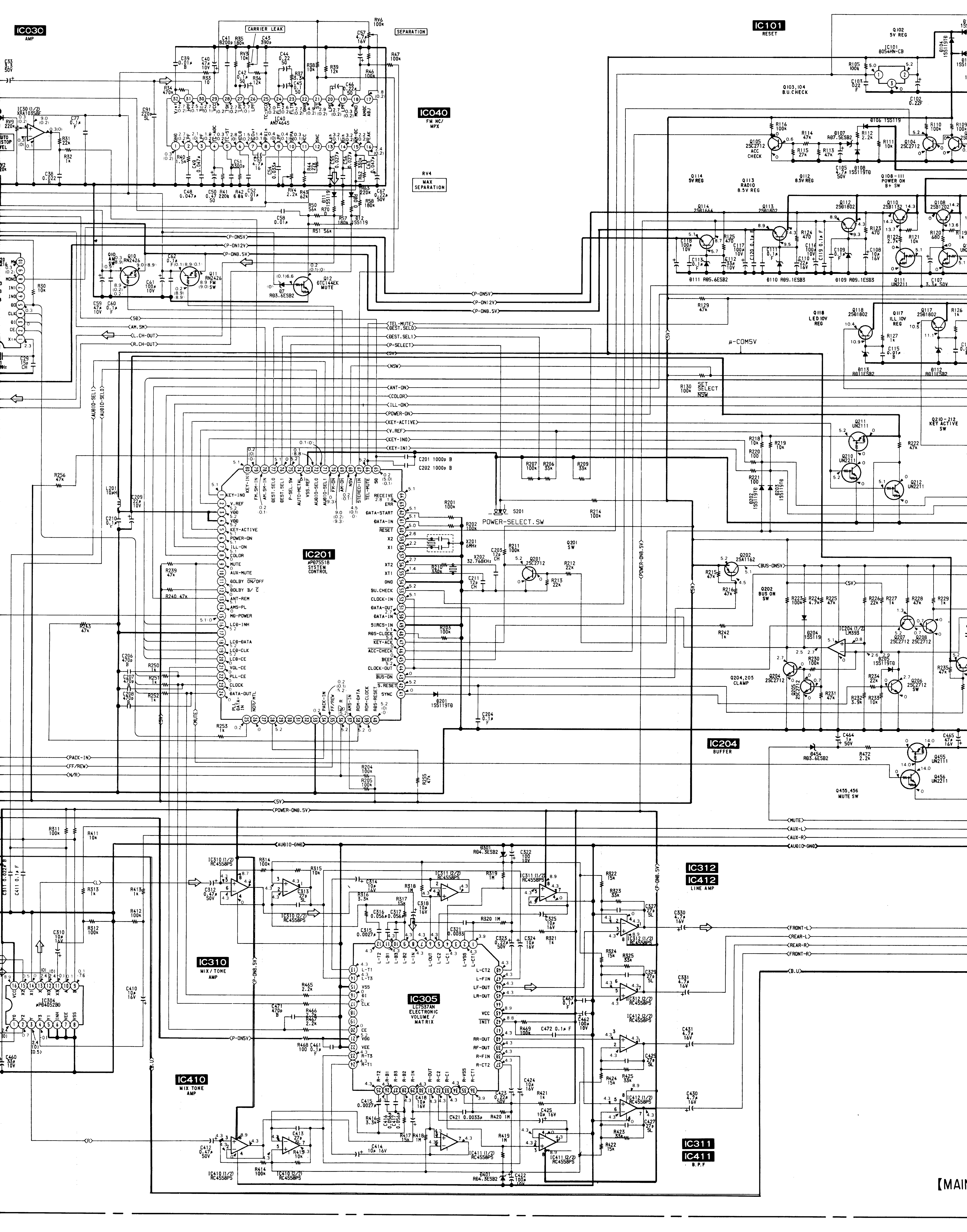
  〈 〉: PB

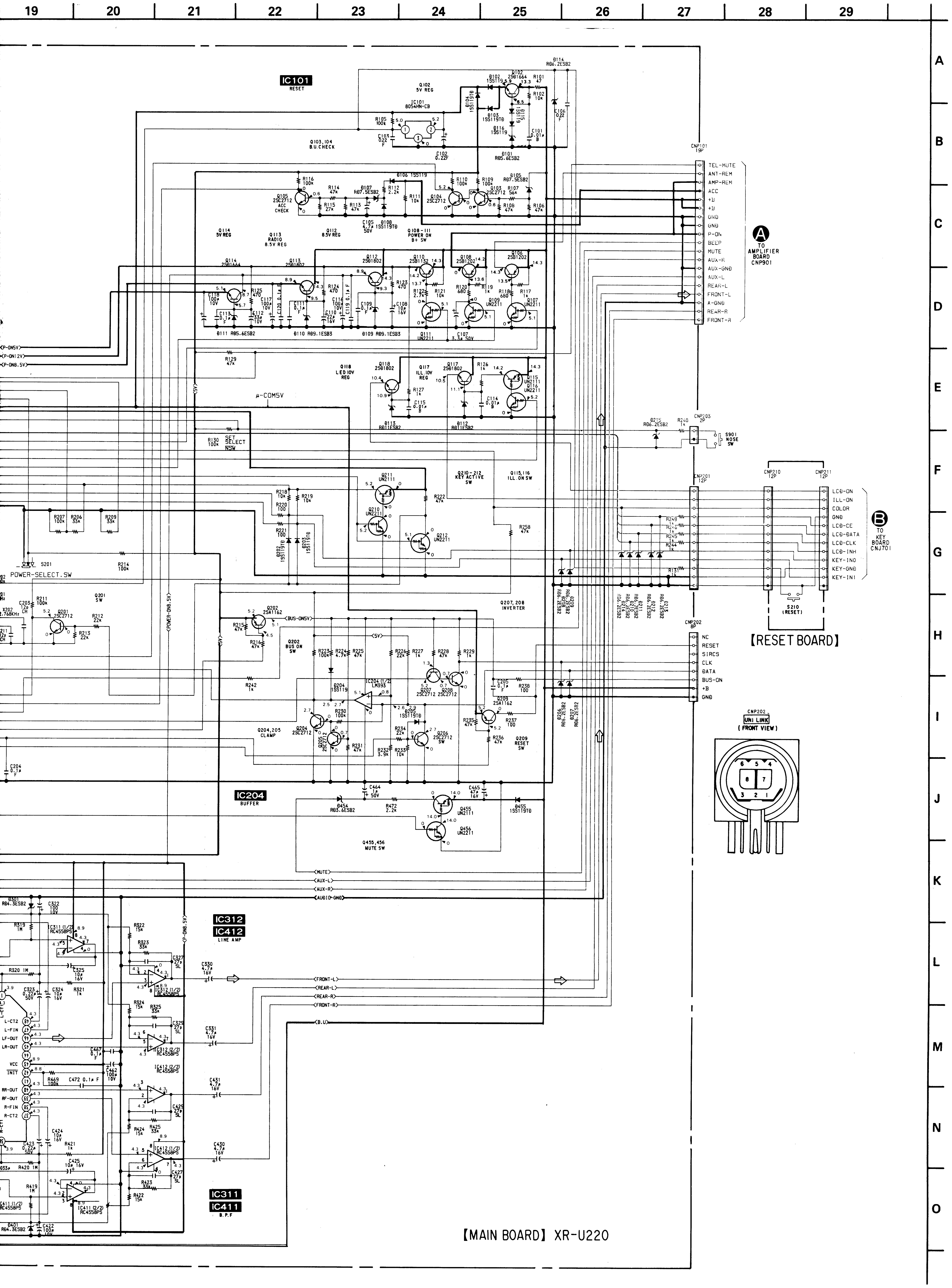
  * : impossible to measure the voltage at the marked points.
- Voltages are taken with a VOM (10 MΩ/V).

  Voltage variations may be noted due to normal production tolerances.
- Signal path.

  ⇨ : FM ⊳ : PB


6
7
8
9
10
11
12
13
14
15
16
17
CNJ10
ANT IN
CNP10 2P
TUNER-UNIT TU10
ANT
GND
Lo/Dx
FM-Vt
FM+B
FM-OSC
MW/LW
AM-Vt
AM+B
AM-OSC
GND
AM-S-Meter
AM-IF-Out
SD
ICS
MUTE
FM-S-Meter
FM-IF-Out
FM-Det-Out
FM-Det-Out
IC030
AMP
IC30 (1/2) XRA10358F
FMAUTO SCANSTOP LEVEL
CARRIER LEAK
IC40 AN7464S
Q2 LOCAL/DX SW
Q3 AMP
Q3 2SC2712
Q7 9V REG
Q7 2SC2712
Q8 2SK536
Q8 L.P.F
D4 RD5.1ESB1
D5 RD10ESB2
IC20 LC7216
X1 7.2MHz
IC020
PLL
Q10 AM SW
Q10 RN2426
Q11 FM SW
Q11 RN2426
Q12 DTC144EK MUTE
D7 RD3.6ESB2
IC201
µPD75518
SYSTEM CONTROL
KEY-IN0
V.REF
VDD
KEY-ACTIVE
POWER-ON
ILL-ON
COLOR
MUTE
AUX-MUTE
DOLBY ON/OFF
DOLBY B/C
ANT-REM
AMS-PL
MG-POWER
LCD-INH
LCD-DATA
LCD-CLK
LCD-CE
VOL-CE
PLL-CE
CLOCK
DATA-OUT
<P-ON5V>
<P-ON12V>
<P-ON8.5V>
<SD>
<AM.SM>
<L.CH-OUT>
<R.CH-OUT>
<AUDIO-SEL1>
<AUDIO-SEL0>
<PACK-IN>
<FF/REW>
<N/R>
<5V>
<POWER-ON8.5V>
<AUDIO-GND>
<B.U>
M101 CAPSTAN/REEL MOTOR
PL101 KEYOFF-PL
MUTE BOARD
S101 FF/REW
S102 PACK-IN
SWITCH BOARD
S103 P/N
HP101 PLAYBACK HEAD
CNP401 8P
CNP402 5P
MD BLOCK
Q451,452 MD ON PLUNGER DRIVE SW
Q451 2SB1132
Q452 UN2211
D451 1SS119TD
IC301 (1/2) BA328F
IC301 (2/2) BA328F
IC301
EQ AMP
IC302 (1/2) RC4558PS
IC302 (2/2) RC4558PS
IC302
AMP
Q457 UN2111
Q458 DTC144EK
Q457,458 TAPE ON SW
D453 1SS119TD
IC304 µPD4052BG
IC304
RADIO/TAPE/AUX SELECTOR
IC310 (1/2) RC4558PS
IC310 (2/2) RC4558PS
IC310
MIX/TONE AMP
IC410
MIX TONE AMP
IC410 (1/2) RC4558PS
IC410 (2/2) RC4558PS

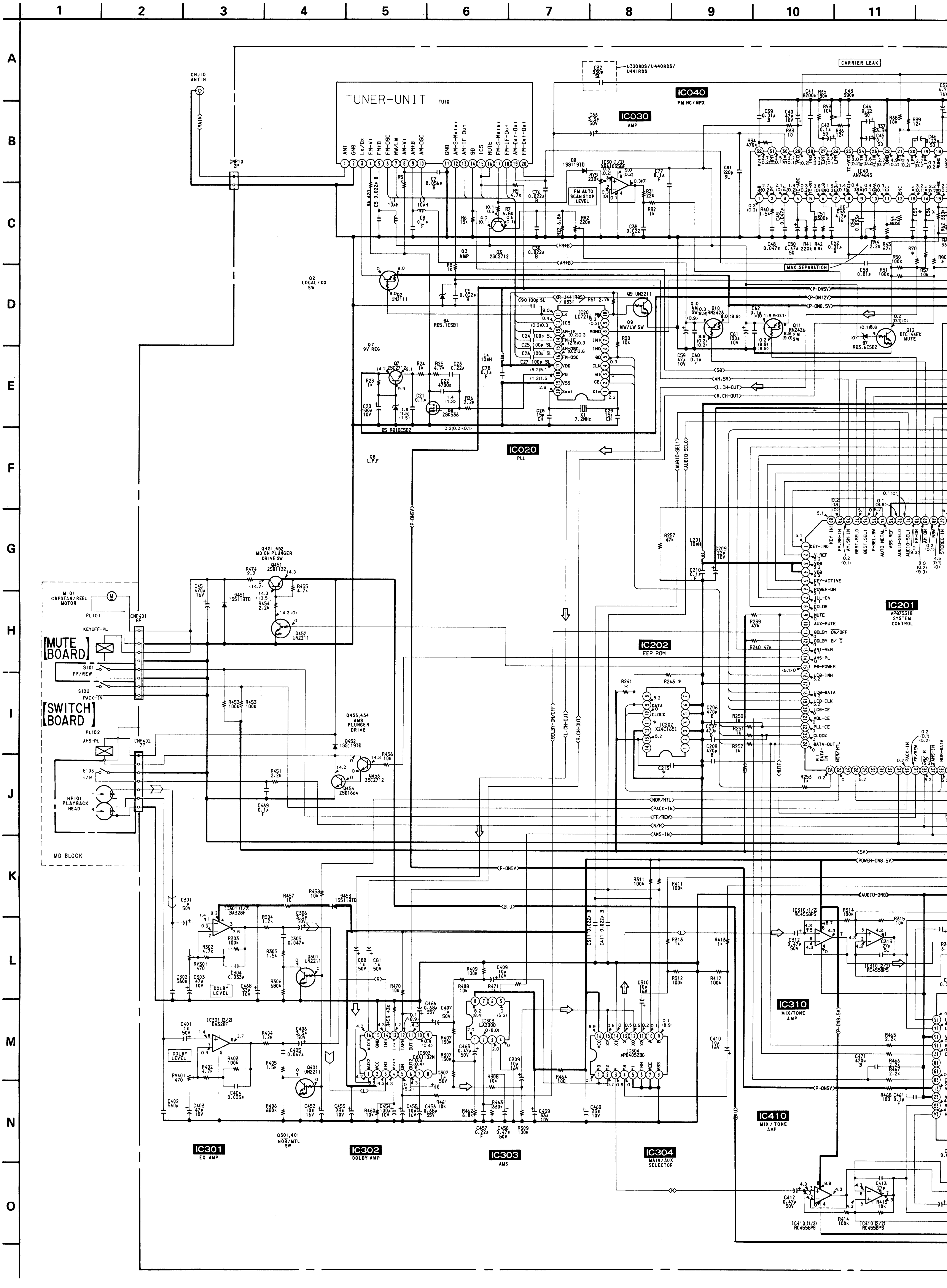

IC030
AMP
IC30 (1/2)
XRA10358F
AUTO STOP LEVEL
CARRIER LEAK
SEPARATION
IC40
AN7464S
IC040
FM MC/MPX
RV4
MAX SEPARATION
IC101
RESET
Q102
5V REG
IC101
8054HN-CB
Q103,104
B.U.CHECK
Q105
2SC2712
ACC CHECK
Q104
2SC2712
Q114
5V REG
Q113
RADIO 8.5V REG
Q112
8.5V REG
Q108-111
POWER ON B+ SW
Q114
2SD1664
Q113
2SD1802
Q112
2SD1802
Q110
2SB1132
Q108
2SB1202
Q111
UN2211
Q118
LED 10V REG
Q117
ILL 10V REG
µ-COM5V
Q10
RN2426
AM
Q11
RN2426
FM SW
Q12
DTC144EK
MUTE
<P-ON5V>
<P-ON12V>
<P-ON8.5V>
<TEL-MUTE>
<DEST.SEL0>
<DEST.SEL1>
<P-SELECT>
<5V>
<NSW>
<ANT-ON>
<COLOR>
<ILL-ON>
<POWER-ON>
<KEY-ACTIVE>
<V.REF>
<KEY-IN0>
<KEY-IN1>
<SB>
<AM.SM>
<L.CH-OUT>
<R.CH-OUT>
<AUDIO-SEL1>
<AUDIO-SEL0>
R130
SET SELECT
NSW
Q211
UN2111
Q210-212
KEY ACTIVE SW
Q210
UN2211
Q212
UN2211
IC201
µPD75518
SYSTEM CONTROL
S201
POWER-SELECT.SW
X201
6MHz
X202
32.768KHz
Q201
2SC2712
SW
Q202
2SA1162
BUS ON SW
<BUS-ON5V>
IC204 (1/2)
LM393
Q207
2SC2712
Q208
2SC2712
Q204,205
CLAMP
Q204
2SC2712
Q206
2SC2712
SW
IC204
BUFFER
Q455
UN2111
Q456
UN2211
Q455,456
MUTE SW
<PACK-IN>
<FF/REW>
<N/R>
<POWER-ON8.5V>
<MUTE>
<AUX-L>
<AUX-R>
<AUDIO-GND>
IC310 (1/2)
RC4558PS
IC310 (2/2)
RC4558PS
IC311 (2/2)
RC4558PS
IC311 (1/2)
RC4558PS
IC312
IC412
LINE AMP
IC312 (1/2)
RC4558PS
IC312 (2/2)
RC4558PS
IC412 (2/2)
RC4558PS
IC412 (1/2)
RC4558PS
<FRONT-L>
<REAR-L>
<REAR-R>
<FRONT-R>
<B.U>
IC310
MIX/TONE AMP
IC305
LC7537AN
ELECTRONIC VOLUME / MATRIX
IC304
µPD4052BG
<L>
<R>
<P-ON5V>
IC410
MIX TONE AMP
IC410 (1/2)
RC4558PS
IC410 (2/2)
RC4558PS
IC411 (1/2)
RC4558PS
IC411 (2/2)
RC4558PS
IC311
IC411
B.P.F
D301
RB4.3ESB2
D401
RB4.3ESB2
[MAI


19
20
21
22
23
24
25
26
27
28
29
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
IC101
RESET
Q102
5V REG
IC101
8054HN-CB
Q103,104
B.U.CHECK
Q105
2SC2712
ACC
CHECK
Q114
5V REG
Q113
RADIO
8.5V REG
Q112
8.5V REG
Q108-111
POWER ON
B+ SW
Q118
LED 10V
REG
Q117
ILL.10V
REG
µ-COM5V
SET
SELECT
NSW
Q210-212
KEY ACTIVE
SW
Q115,116
ILL.ON SW
S201
POWER-SELECT.SW
Q201
SW
Q202
BUS ON
SW
Q207,208
INVERTER
IC204 (1/2)
LM393
Q204,205
CLAMP
Q209
RESET
SW
IC204
BUFFER
Q455,456
MUTE SW
IC312
IC412
LINE AMP
IC311
IC411
B.P.F
CNP101
19P
TEL-MUTE
ANT-REM
AMP-REM
ACC
+U
+B
GND
GND
P-ON
BEEP
MUTE
AUX-R
AUX-GND
AUX-L
REAR-L
FRONT-L
A-GND
REAR-R
FRONT-R
A
TO
AMPLIFIER
BOARD
CNP901
CNP203
2P
S901
NOSE
SW
CNP201
12P
CNP210
12P
CNP211
12P
LCD-ON
ILL-ON
COLOR
GND
LCD-CE
LCD-DATA
LCD-CLK
LCD-INH
KEY-IN0
KEY-GND
KEY-IN1
B
TO
KEY
BOARD
CNJ701
S210
(RESET)
【RESET BOARD】
CNP202
8P
NC
RESET
SIRCS
CLK
DATA
BUS-ON
+B
GND
CNP202
UNI LINK
(FRONT VIEW)
<P-ON5V>
<P-ON12V>
<P-ON8.5V>
<BUS-ON5V>
<5V>
<MUTE>
<AUX-L>
<AUX-R>
<AUDIO-GND>
<FRONT-L>
<REAR-L>
<REAR-R>
<FRONT-R>
<B.U>
<POWER-ON8.5V>
<P-ON8.5V>
L-CT2
L-FIN
LF-OUT
LR-OUT
VCC
INIT
RR-OUT
RF-OUT
R-FIN
R-CT2

【MAIN BOARD】 XR-U220

3-4. SCHEMATIC DIAGRAM (MAIN SECTION)

- See page 25 for IC Block Diagrams.



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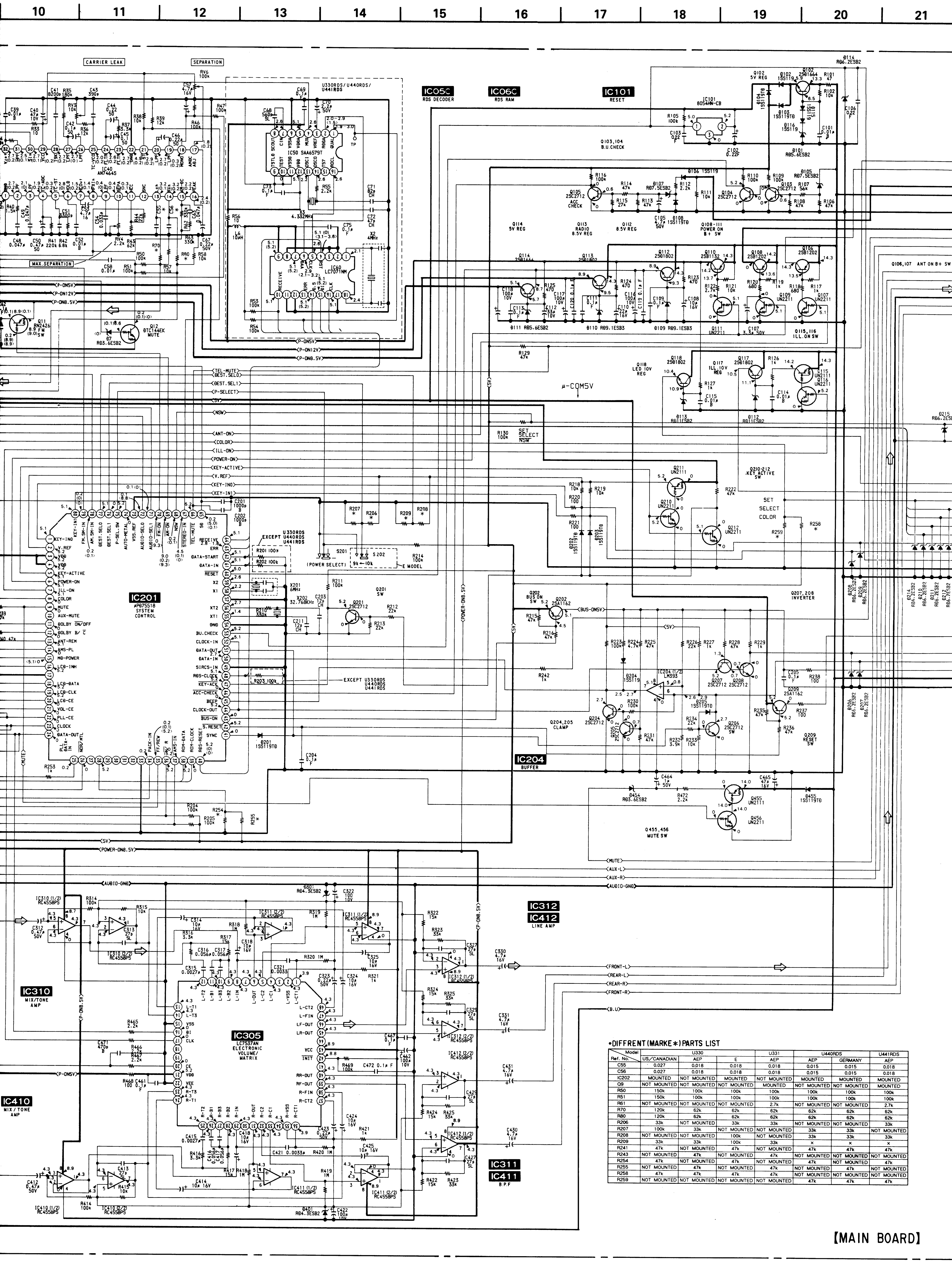
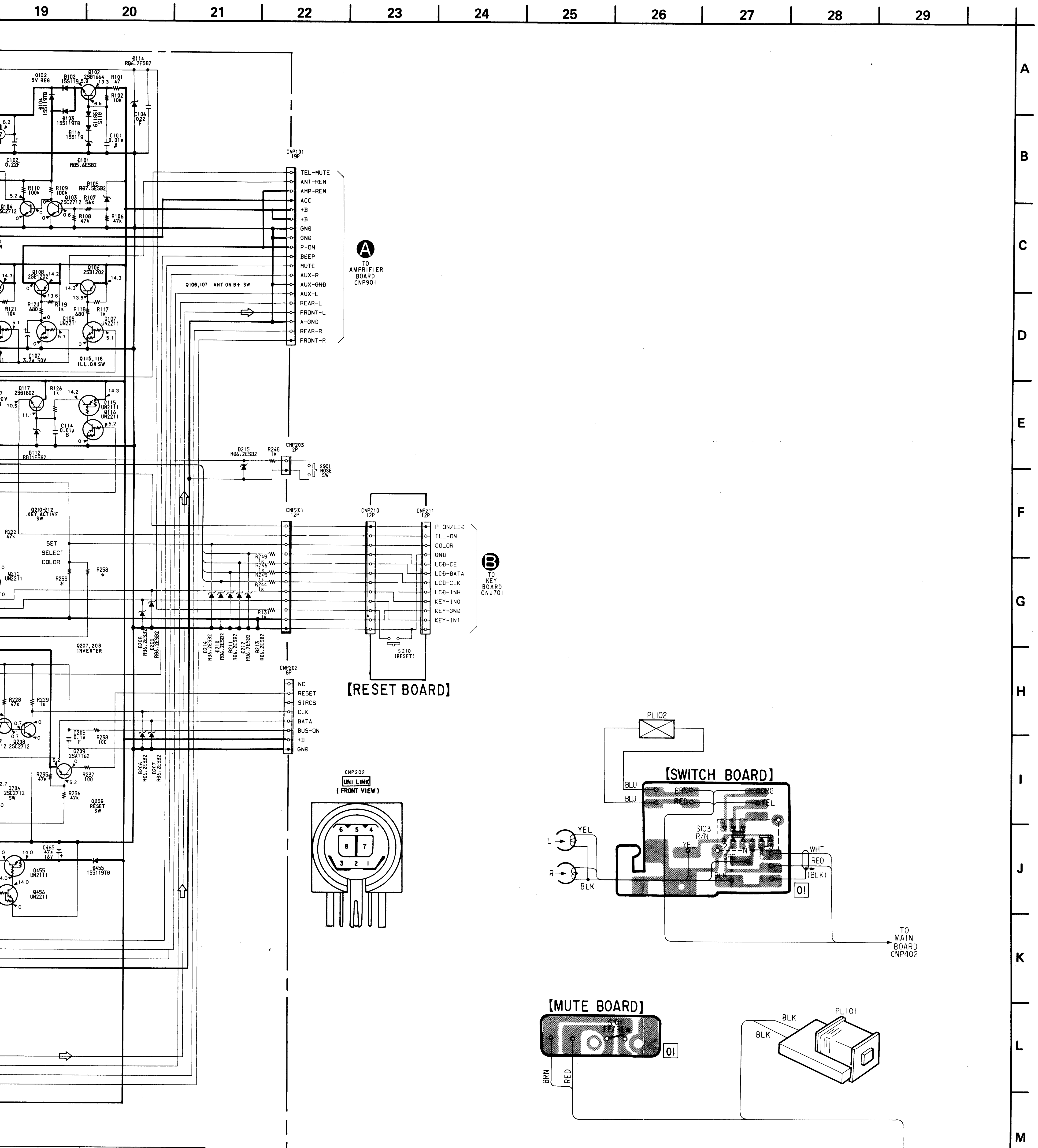
11
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
TUNER-UNIT TU10
CNJ10 ANT IN
CNP10 2P
ANT
GND
Lo/Dx
FM-Vt
FM+B
FM-OSC
MW/LW
AM-Vt
AM+B
AM-OSC
GND
AM-S-Meter
AM-IF-Out
SD
ICS
MUTE
FM-S-Meter
FM-IF-Out
AM-Det-Out
FM-Det-Out
U330RDS/U440RDS/U441RDS
IC030 AMP
IC030 (1/2) XRA10558F
FM AUTO SCAN STOP LEVEL
IC040 FM MC/MPX
IC40 AN7464S
CARRIER LEAK
MAX.SEPARATION
Q2 LOCAL/DX SW
Q2 UN2111
Q3 AMP
Q3 2SC2712
Q7 9V REG
Q7 2SC2712
Q8 2SK536
Q8 L.P.F
Q9 UN2211
Q9 MW/LW SW
Q10 AM SW
Q10 RN2426
Q11 FM SW
Q11 RN2426
Q12 DTC144EK MUTE
IC20 LC7216
IC020 PLL
X1 7.2MHz
XR-U441RDS/U331
<FM+B>
<AM+B>
<P-ON5V>
<P-ON12V>
<P-ON8.5V>
<SD>
<AM.SM>
<L.CH-OUT>
<R.CH-OUT>
<AUDIO-SEL1>
<AUDIO-SEL0>
<BOLBY-ON/OFF>
<L.CH-OUT>
<R.CH-OUT>
Q451,452 MD ON PLUNGER DRIVE SW
Q451 2SB1132
Q452 UN2211
D451 1SS119TD
Q453,454 AMS PLUNGER DRIVE
D452 1SS119TD
Q453 2SC2712
Q454 2SB1664
M101 CAPSTAN/REEL MOTOR
PL101
KEYOFF-PL
CNP401 8P
MUTE BOARD
S101 FF/REW
S102 PACK-IN
SWITCH BOARD
PL102
AMS-PL
CNP402 7P
S103 -/N
HP101 PLAYBACK HEAD
MD BLOCK
IC202 EEP ROM
IC202 X24C16SI
IC201 μPD75518 SYSTEM CONTROL
KEY-IN0
V.REF
KEY-ACTIVE
POWER-ON
ILL-ON
COLOR
MUTE
AUX-MUTE
DOLBY ON/OFF
DOLBY B/C
ANT-REM
AMS-PL
MD-POWER
LCD-INH
LCD-DATA
LCD-CLK
LCD-CE
VOL-CE
PLL-CE
CLOCK
DATA-OUT
<NOR/MTL>
<PACK-IN>
<FF/REW>
<N/R>
<AMS-IN>
<5V>
<POWER-ON8.5V>
<AUDIO-GND>
<B.U>
<P-ON5V>
<L>
<R>
<MUTE>
IC301 (1/2) BA328F
IC301 (2/2) BA328F
IC301 EQ AMP
DOLBY LEVEL
Q301 UN2211
Q401 UN2211
Q301,401 NOR/MTL SW
D453 1SS119TD
IC302 CXA1102M
IC302 DOLBY AMP
IC303 LA2000
IC303 AMS
IC304 μPB4052BG
IC304 MAIN/AUX SELECTOR
IC310 (1/2) RC4558PS
IC310 (2/2) RC4558PS
IC310 MIX/TONE AMP
IC410 (1/2) RC4558PS
IC410 (2/2) RC4558PS
IC410 MIX/TONE AMP


10
11
12
13
14
15
16
17
18
19
20
21
CARRIER LEAK
SEPARATION
MAX.SEPARATION
IC40 AN7464S
IC50 SAA6579T
U330RDS/U440RDS/U441RDS
IC60 LC7071NM
IC05C RDS DECODER
IC06C RDS RAM
IC101 RESET
IC101 8054HN-CB
μ-COM5V
IC201 μPD75518 SYSTEM CONTROL
EXCEPT U330RDS U440RDS U441RDS
S201 (POWER SELECT)
S202
E MODEL
IC204 BUFFER
IC204 (1/2) LM393
Q455,456 MUTE SW
IC312 IC412 LINE AMP
IC310 MIX/TONE AMP
IC305 LC7537AN ELECTRONIC VOLUME/MATRIX
IC410 MIX/TONE AMP
IC311 IC411 B.P.F
<P-ON5V>
<P-ON12V>
<P-ON8.5V>
<TEL-MUTE>
<DEST.SEL0>
<DEST.SEL1>
<P-SELECT>
<5V>
<NSW>
<ANT-ON>
<COLOR>
<ILL-ON>
<POWER-ON>
<KEY-ACTIVE>
<V.REF>
<KEY-IN0>
<KEY-IN1>
<BUS-ON5V>
<POWER-ON8.5V>
<AUDIO-GND>
<MUTE>
<AUX-L>
<AUX-R>
<FRONT-L>
<REAR-L>
<REAR-R>
<FRONT-R>
<B.U>

•DIFFRENT (MARKE＊) PARTS LIST

Model / Ref. No.	U330			U331	U440RDS		U441RDS
	US/CANADIAN	AEP	E	AEP	AEP	GERMANY	AEP
C55	0.027	0.018	0.018	0.018	0.015	0.015	0.018
C56	0.027	0.018	0.018	0.018	0.015	0.015	0.018
IC202	MOUNTED	NOT MOUNTED	MOUNTED	NOT MOUNTED	MOUNTED	MOUNTED	MOUNTED
Q9	NOT MOUNTED	NOT MOUNTED	NOT MOUNTED	MOUNTED	NOT MOUNTED	NOT MOUNTED	MOUNTED
R50	150k	100k	100k	100k	100k	100k	100k
R51	150k	100k	100k	100k	100k	100k	100k
R61	NOT MOUNTED	NOT MOUNTED	NOT MOUNTED	2.7k	NOT MOUNTED	NOT MOUNTED	2.7k
R70	120k	62k	62k	62k	62k	62k	62k
R80	120k	62k	62k	62k	62k	62k	62k
R206	33k	NOT MOUNTED	33k	33k	NOT MOUNTED	NOT MOUNTED	33k
R207	100k	33k	NOT MOUNTED	NOT MOUNTED	33k	33k	NOT MOUNTED
R208	NOT MOUNTED	NOT MOUNTED	100k	NOT MOUNTED	33k	33k	33k
R209	33k	33k	100k	33k	×	×	×
R241	47k	NOT MOUNTED	47k	NOT MOUNTED	47k	47k	47k
R243	NOT MOUNTED	47k	NOT MOUNTED	47k	NOT MOUNTED	NOT MOUNTED	NOT MOUNTED
R254	47k	NOT MOUNTED	47k	NOT MOUNTED	47k	NOT MOUNTED	47k
R255	NOT MOUNTED	47k	NOT MOUNTED	47k	NOT MOUNTED	47k	NOT MOUNTED
R258	47k	47k	47k	47k	NOT MOUNTED	NOT MOUNTED	NOT MOUNTED
R259	NOT MOUNTED	NOT MOUNTED	NOT MOUNTED	NOT MOUNTED	47k	47k	47k

【MAIN BOARD】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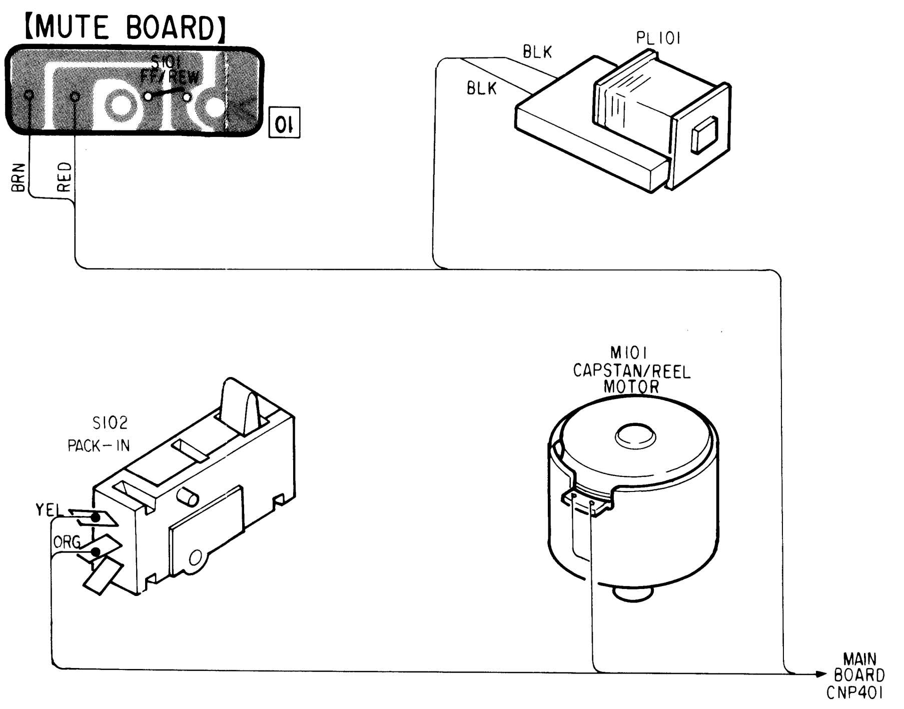
H
I
J
K
L
M
N
O
D114 RD6.2ESB2
Q102 5V REG
D102 1SS119
Q102 2SB1664
R101 47
R102 10k
C106 0.22 F
D104 1SS119TD
D103 1SS119TD
D115 1SS119
D116 1SS119
C101 0.01μ B
C102 0.22F
D101 RD5.6ESB2
R110 100k
R109 100k
D105 RD7.5ESB2
Q103 2SC2712
R107 56k
Q104 2SC2712
R108 47k
R106 47k
Q108 2SB1202
Q106 2SB1202
Q106,107 ANT ON B+ SW
R120 680
R119 1k
R121 10k
R118 680
R117 1k
Q109 UN2211
Q107 UN2211
C107 3.3μ 50V
Q115,116 ILL.ON SW
Q117 2SB1602
R126 1k
Q115 UN2111
Q116 UN2211
C114 0.01μ B
D112 RD11ESB2
CNP101 19P
TEL-MUTE
ANT-REM
AMP-REM
ACC
+B
+B
GND
GND
P-ON
BEEP
MUTE
AUX-R
AUX-GND
AUX-L
REAR-L
FRONT-L
A-GND
REAR-R
FRONT-R
A
TO AMPRIFIER BOARD CNP901
D215 RD6.2ESB2
R248 1k
CNP203 2P
S901 NOSE SW
Q210-212 KEY ACTIVE SW
R222 47k
SET
SELECT
COLOR
Q212 UN2211
R259 *
R258 *
CNP201 12P
R249
R246
R275
R244
R131
CNP210 12P
CNP211 12P
P-ON/LED
ILL-ON
COLOR
GND
LCD-CE
LCD-DATA
LCD-CLK
LCD-INH
KEY-IN0
KEY-GND
KEY-IN1
B
TO KEY BOARD CNJ701
S210 (RESET)
【RESET BOARD】
Q207,208 INVERTER
D208 RD6.2ESB2
D209 RD6.2ESB2
D214 RD6.2ESB2
D210 RD6.2ESB2
D211 RD6.2ESB2
D212 RD6.2ESB2
D213 RD6.2ESB2
CNP202 8P
NC
RESET
SIRCS
CLK
DATA
BUS-ON
+B
GND
R228 47k
R229 1k
Q208 2SC2712
C205 0.1μ F
R238 100
Q209 2SA1162
R237 100
R235 47k
R236 47k
Q206 2SC2712 SW
Q209 RESET SW
D206 RD6.2ESB2
D207 RD6.2ESB2
CNP202
UNI LINK
(FRONT VIEW)
6
5
4
8
7
3
2
1
C465 47μ 16V
D455 1SS119TD
Q455 UN2111
Q456 UN2211
PL102
【SWITCH BOARD】
BLU
BLU
BRN
RED
ORG
YEL
S103 R/N
L
R
YEL
YEL
ORG
N
WHT
RED
(BLK)
BLK
BLK
01
TO MAIN BOARD CNP402

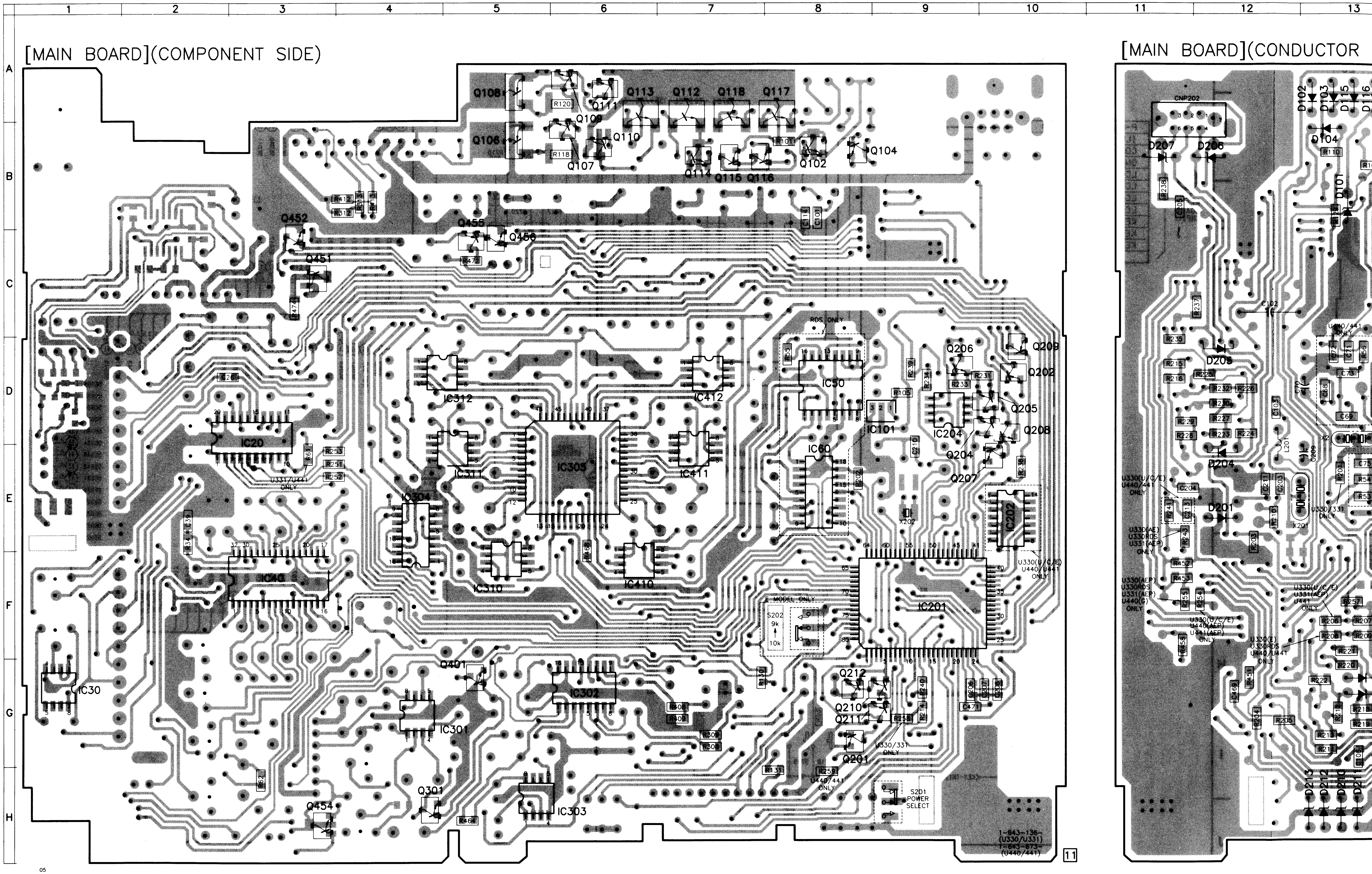
	U331	U440RDS		U441RDS
E	AEP	AEP	GERMANY	AEP
0.018	0.018	0.015	0.015	0.018
0.018	0.018	0.015	0.015	0.018
MOUNTED	NOT MOUNTED	MOUNTED	MOUNTED	MOUNTED
OT MOUNTED	MOUNTED	NOT MOUNTED	NOT MOUNTED	MOUNTED
100k	100k	100k	100k	100k
100k	100k	100k	100k	100k
OT MOUNTED	2.7k	NOT MOUNTED	NOT MOUNTED	2.7k
62k	62k	62k	62k	62k
62k	62k	62k	62k	62k
33k	33k	NOT MOUNTED	NOT MOUNTED	33k
OT MOUNTED	NOT MOUNTED	33k	33k	NOT MOUNTED
100k	NOT MOUNTED	33k	33k	33k
100k	33k	×	×	×
47k	NOT MOUNTED	47k	47k	47k
OT MOUNTED	47k	NOT MOUNTED	NOT MOUNTED	NOT MOUNTED
47k	NOT MOUNTED	47k	NOT MOUNTED	47k
OT MOUNTED	47k	NOT MOUNTED	47k	NOT MOUNTED
47k	47k	NOT MOUNTED	NOT MOUNTED	NOT MOUNTED
OT MOUNTED	NOT MOUNTED	47k	47k	47k


【MUTE BOARD】
S101 FF/REW
01
BRN
RED
BLK
BLK
PL101
M101
CAPSTAN/REEL
MOTOR
S102
PACK-IN
YEL
ORG
MAIN BOARD CNP401

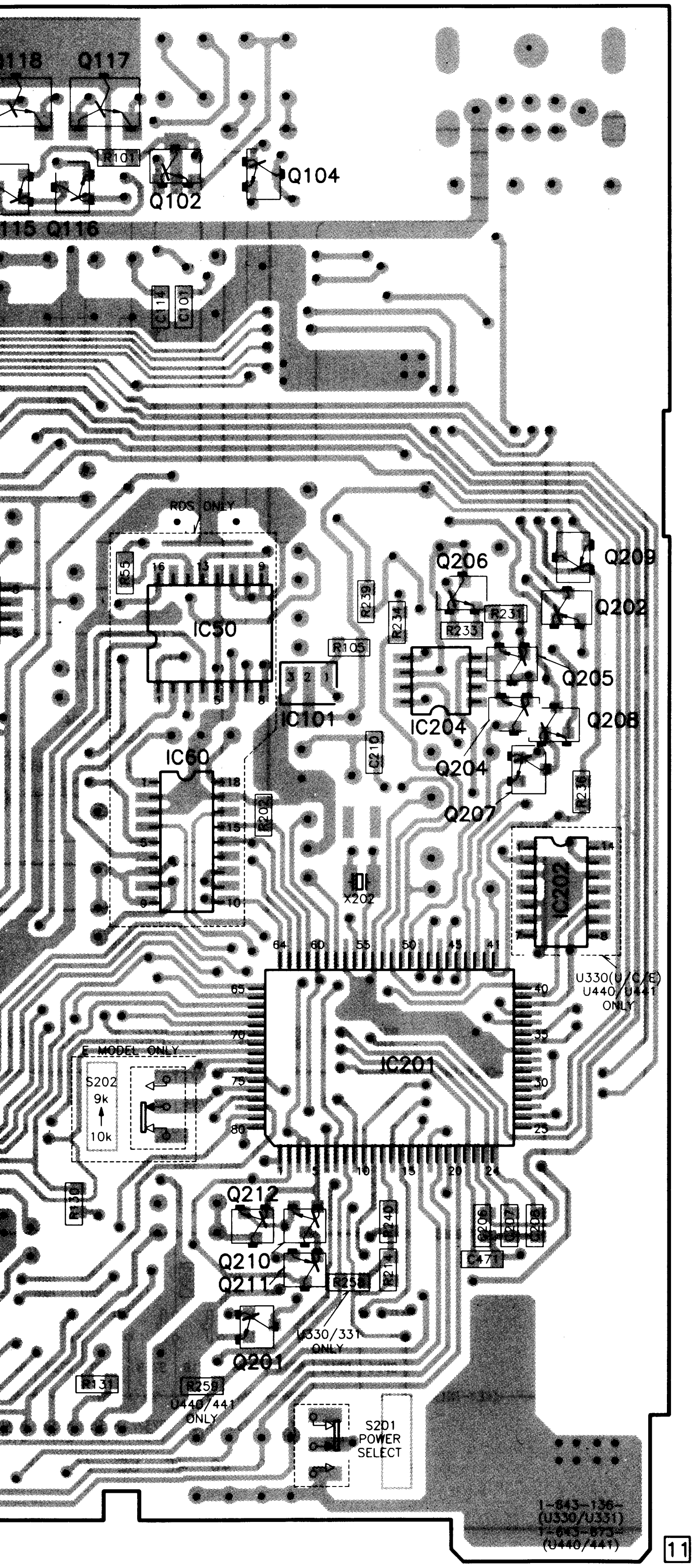
【MAIN BOARD】

3-5. PRINTED WIRING BOARDS (MAIN SECTION)

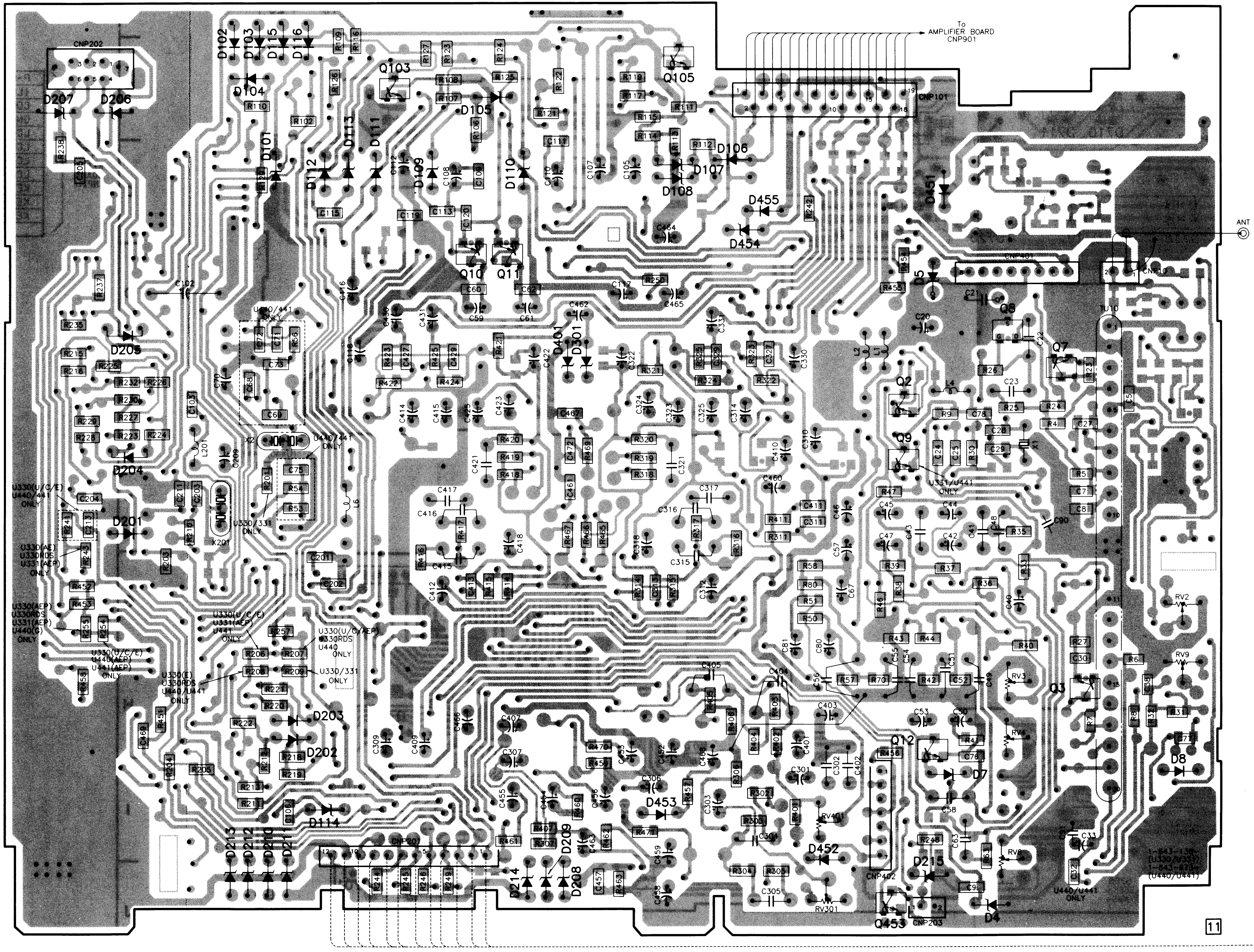
- See page 26 for Semiconductor Lead Layouts.


[MAIN BOARD](COMPONENT SIDE)
[MAIN BOARD](CONDUCTOR
1
2
3
4
5
6
7
8
9
10
11
12
13
A
B
C
D
E
F
G
H
Q108
Q106
Q109
Q111
Q110
Q107
Q113
Q112
Q118
Q117
Q114
Q115
Q116
Q102
Q104
Q452
Q455
Q456
Q451
IC20
IC40
IC30
IC312
IC311
IC304
IC305
IC310
IC410
IC411
IC412
IC50
IC60
IC101
IC204
IC202
IC201
IC301
IC302
IC303
Q401
Q301
Q454
Q206
Q209
Q202
Q205
Q208
Q204
Q207
Q212
Q210
Q211
Q201
RDS ONLY
U331/U441 ONLY
E MODEL ONLY
S202
9k
10k
U330/331 ONLY
U440/441 ONLY
S201 POWER SELECT
U330(U/C/E) U440/U441 ONLY
1-643-136- (U330/U331) 1-643-673- (U440/441)
11
CNP202
D207
D206
D102
D103
D115
D116
D104
D101
D205
D204
D201
D213
D212
D210
D211
X201
X202
05

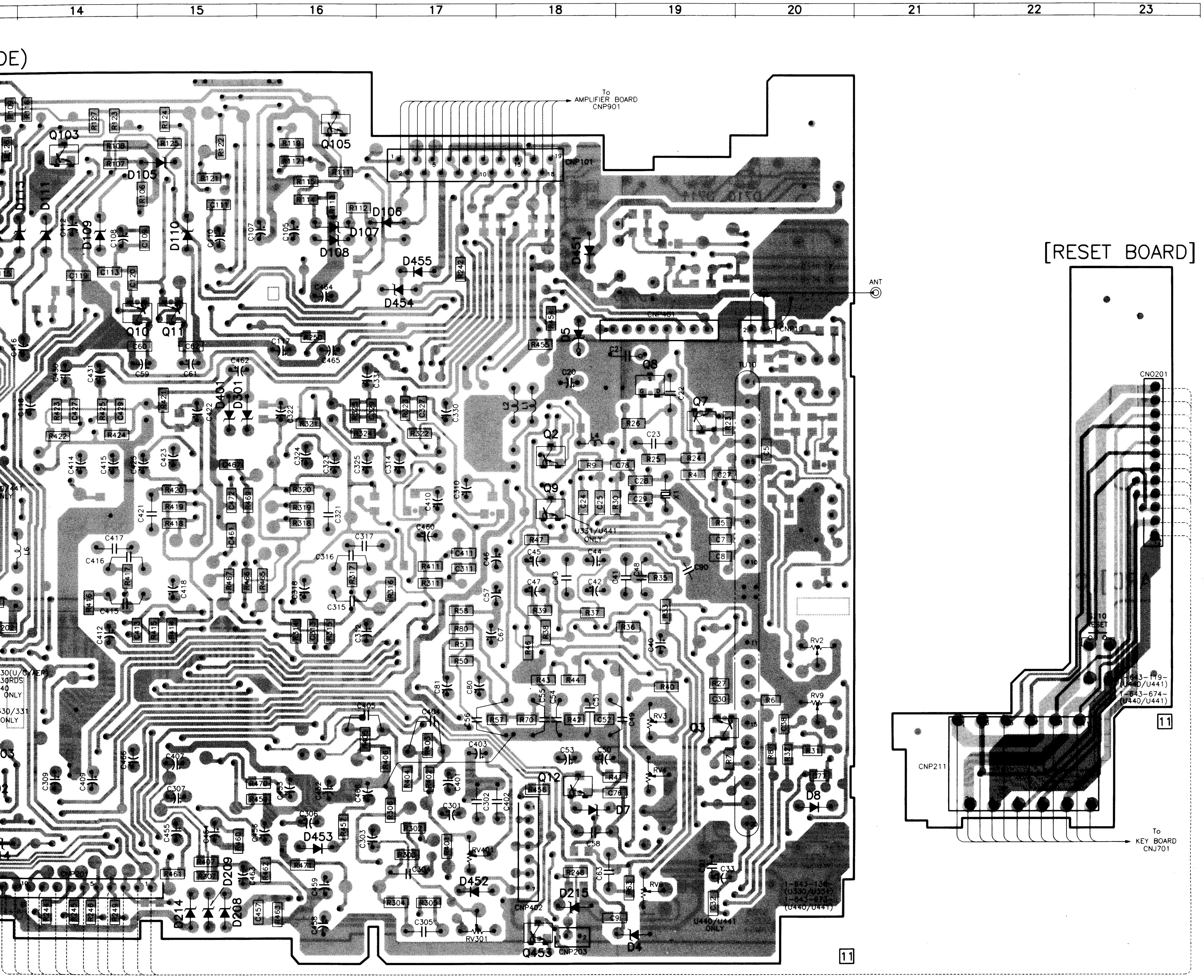
8 9 10 11 12 13 14 15 16 17 18 19 20


Q118
Q117
Q101
Q102
Q104
Q115
Q116
RDS ONLY
IC50
IC101
IC60
IC204
Q206
Q209
Q202
Q205
Q208
Q204
Q207
IC202
X202
IC201
E MODEL ONLY
S202
9k
10k
Q212
Q210
Q211
Q201
U330/331 ONLY
U440/441 ONLY
U330(U/C/E) U440/U441 ONLY
S201 POWER SELECT
1-643-136- (U330/U331) 1-643-873- (U440/441)
11

[MAIN BOARD](CONDUCTOR SIDE)


To AMPLIFIER BOARD CNP901
ANT
CNP202
CNP101
CNP401
CNP201
CNP402
CNP203
D207
D206
D102
D103
D115
D116
D104
D101
D112
D113
D111
D109
D105
D110
D106
D107
D108
D455
D454
D451
D5
Q103
Q105
Q10
Q11
D205
D204
D201
U440/441 ONLY
X2
U440/441 ONLY
U330/331 ONLY
K201
U330(U/C/E) U440/441 ONLY
U330(AE) U330RDS U331(AEP) ONLY
U330(AEP) U330RDS U331(AEP) U440(G) ONLY
U330(U/C/E) U331(AEP) U441 ONLY
U330(U/C/E) U440(AEP) U441(AEP) ONLY
U330(U/C/AEP) U330RDS U440 ONLY
U330/331 ONLY
U330(E) U330RDS U440/U441 ONLY
D203
D202
D114
D213
D212
D210
D211
D214
D209
D208
D401
D301
D453
D452
RV401
RV301
Q453
D215
Q8
Q7
Q2
Q9
U331/U441 ONLY
Q12
D7
Q3
RV2
RV9
RV3
RV4
RV8
D8
D4
TU10
U440/U441 ONLY
1-643-136- (U330/U331) 1-643-873- (U440/U441)
11

DE)


14
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21
22
23
To AMPLIFIER BOARD CNP901
CNP101
ANT
CNP401
CNP10
TU10
[RESET BOARD]
CNO201
S10 RESET
CNP211
To KEY BOARD CNJ701
1-643-119- (U440/U441)
1-643-674- (U440/U441)
U331/U441 ONLY
U440/U441 ONLY
CNP402
CNP203
11

• Semiconductor Location

Ref. No.	Location	Ref. No.	Location
D4	H-19	IC303	H-5
D5	C-18	IC304	E-4
D7	G-18	IC305	E-6
D8	G-20	IC310	F-5
D101	B-13	IC311	E-5
D102	A-13	IC312	D-5
D103	A-13	IC410	F-6
D104	B-13	IC411	E-7
D105	B-15	IC412	D-7
D106	B-17		
D107	B-16	Q2	D-18
D108	B-16	Q3	F-19
D109	B-14	Q7	D-19
D110	B-15	Q8	D-19
D111	B-14	Q9	E-18
D112	B-13	Q10	C-14
D113	B-14	Q11	C-15
D114	G-13	Q12	G-18
D115	A-13	Q102	B-8
D116	A-13	Q103	B-14
D201	E-12	Q104	B-8
D202	G-13	Q105	A-16
D203	G-13	Q106	B-5
D204	E-12	Q107	B-6
D205	D-12	Q108	A-5
D206	B-12	Q109	A-6
D207	B-11	Q110	B-6
D208	H-15	Q111	A-6
D209	H-15	Q112	A-7
D210	H-13	Q113	A-6
D211	H-13	Q114	B-7
D212	H-13	Q115	B-7
D213	H-13	Q116	B-7
D214	H-15	Q117	A-8
D215	H-18	Q118	A-7
D301	D-15	Q201	G-8
D401	D-15	Q202	D-10
D451	B-18	Q204	D-10
D452	H-17	Q205	D-10
D453	G-16	Q206	D-9
D454	C-17	Q207	E-10
D455	C-17	Q208	D-10
		Q209	D-10
IC20	D-3	Q210	G-9
IC30	G-1	Q211	G-9
IC40	F-3	Q212	G-8
IC50	D-8	Q301	H-4
IC60	E-8	Q401	G-5
IC101	D-9	Q451	C-3
IC201	F-9	Q452	C-3
IC202	E-10	Q453	H-18
IC204	D-9	Q454	H-3
IC301	G-4	Q455	C-5
IC302	G-6	Q456	C-5

Note:

- ○——— : parts extracted from the component side.
- ● : Through hole.
- ▨ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

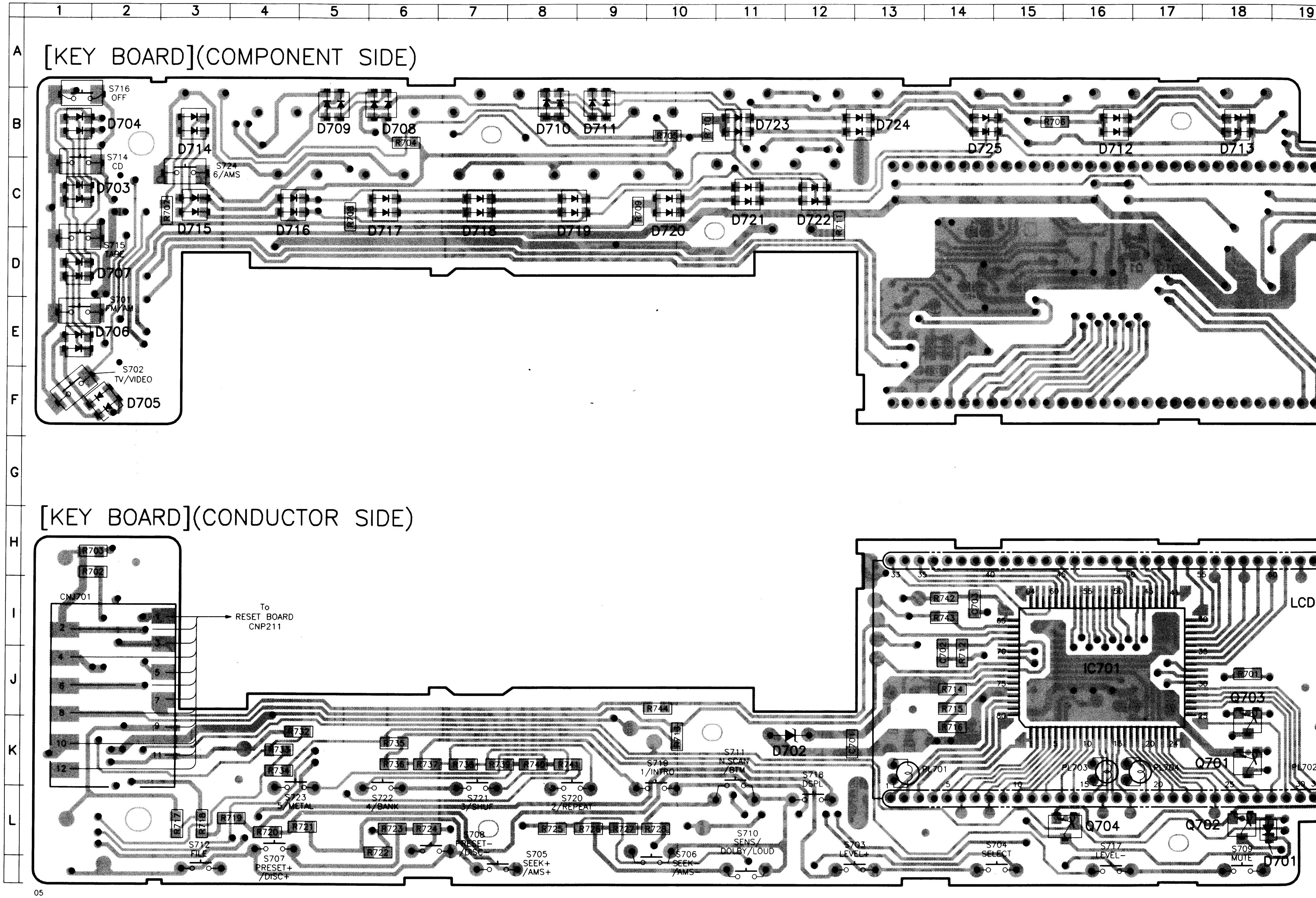
- ▨ : Pattern of the rear side.

3-6. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM (KEY SECTION)

- **See page 25 for IC Block Diagrams, page 26 for Semiconductor Lead Layouts.**

- **Semiconductor Location**

Ref. No.	Location
D701	L-18
D702	K-12
D703	C-1
D704	B-1
D705	F-2
D706	E-1
D707	D-1
D708	B-6
D709	B-5
D710	B-8
D711	B-9
D712	B-16
D713	B-18
D714	B-3
D715	C-3
D716	C-4
D717	C-6
D718	C-7
D719	C-8
D720	C-10
D721	C-11
D722	C-12
D723	B-11
D724	B-13
D725	B-14
IC701	J-16
Q701	K-18
Q702	L-18
Q703	J-18
Q704	L-16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16
17
18
19
A
B
C
D
E
F
G
H
I
J
K
L
[KEY BOARD](COMPONENT SIDE)
S716 OFF
D704
S714 CD
D703
S715 TAPE
D707
S701 FM/AM
D706
S702 TV/VIDEO
D705
D714
S724 6/AMS
D715
R703
D709
D708
R704
D716
R708
D717
D718
D710
D711
D719
R705
R709
D720
R710
D723
D721
D722
R711
D724
D725
R706
D712
D713
[KEY BOARD](CONDUCTOR SIDE)
R703
R702
CNJ701
To RESET BOARD CNP211
R732
R733
R734
R717
R718
R719
R720
R721
S712 FILE
S707 PRESET+ /DISC+
S723 5/METAL
R735
R736
R737
R738
R739
R740
R741
S722 4/BANK
S721 3/SHUF
S720 2/REPEAT
R723
R724
R722
S708 PRESET- /DISC-
S705 SEEK+ /AMS+
R725
R726
R727
R728
S706 SEEK- /AMS-
R744
R713
S719 1/INTRO
S711 N.SCAN /BTM
S710 SENS/ DOLBY/LOUD
D702
C706
S718 DSPL
S703 LEVEL+
R742
R743
C703
C702
R712
R714
R715
R716
IC701
PL701
PL703
PL704
S704 SELECT
Q704
S717 LEVEL-
Q701
R701
Q703
Q702
S709 MUTE
D701
PL702
LCD
05

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- % : indicates tolerance.
- ▬▬ : B + Line.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from BAT and ACC terminals.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : Common

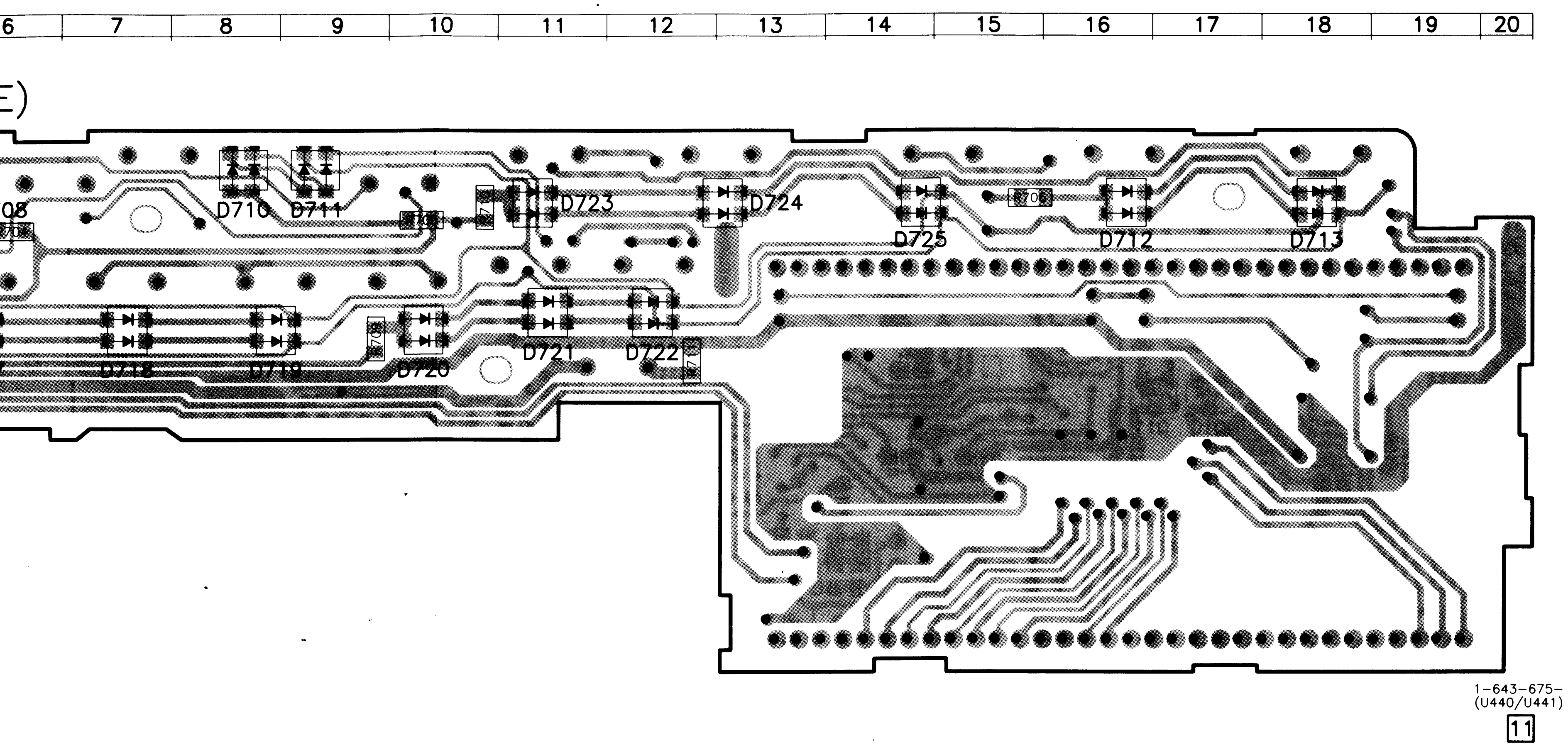
Note on Printed Wiring Board:

- ○—— : parts extracted from the component side.
- ● : Through hole.
- ▨ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

Caution:

Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.



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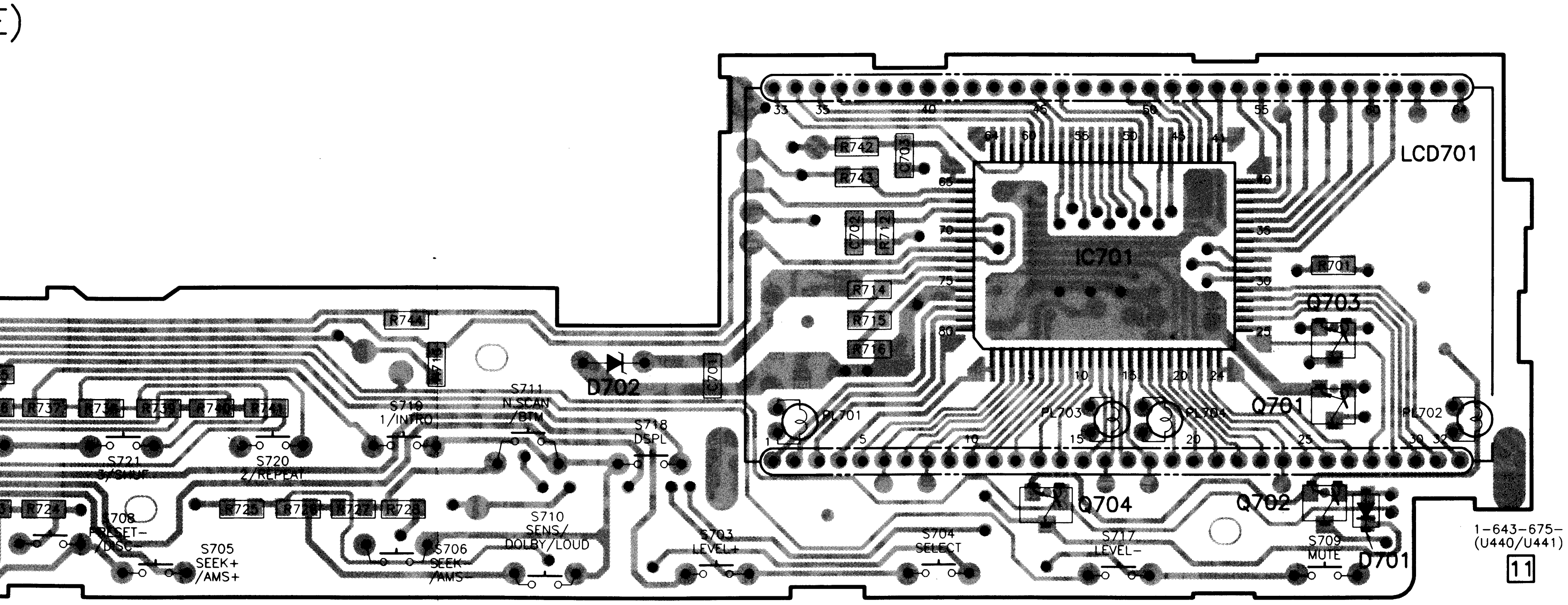
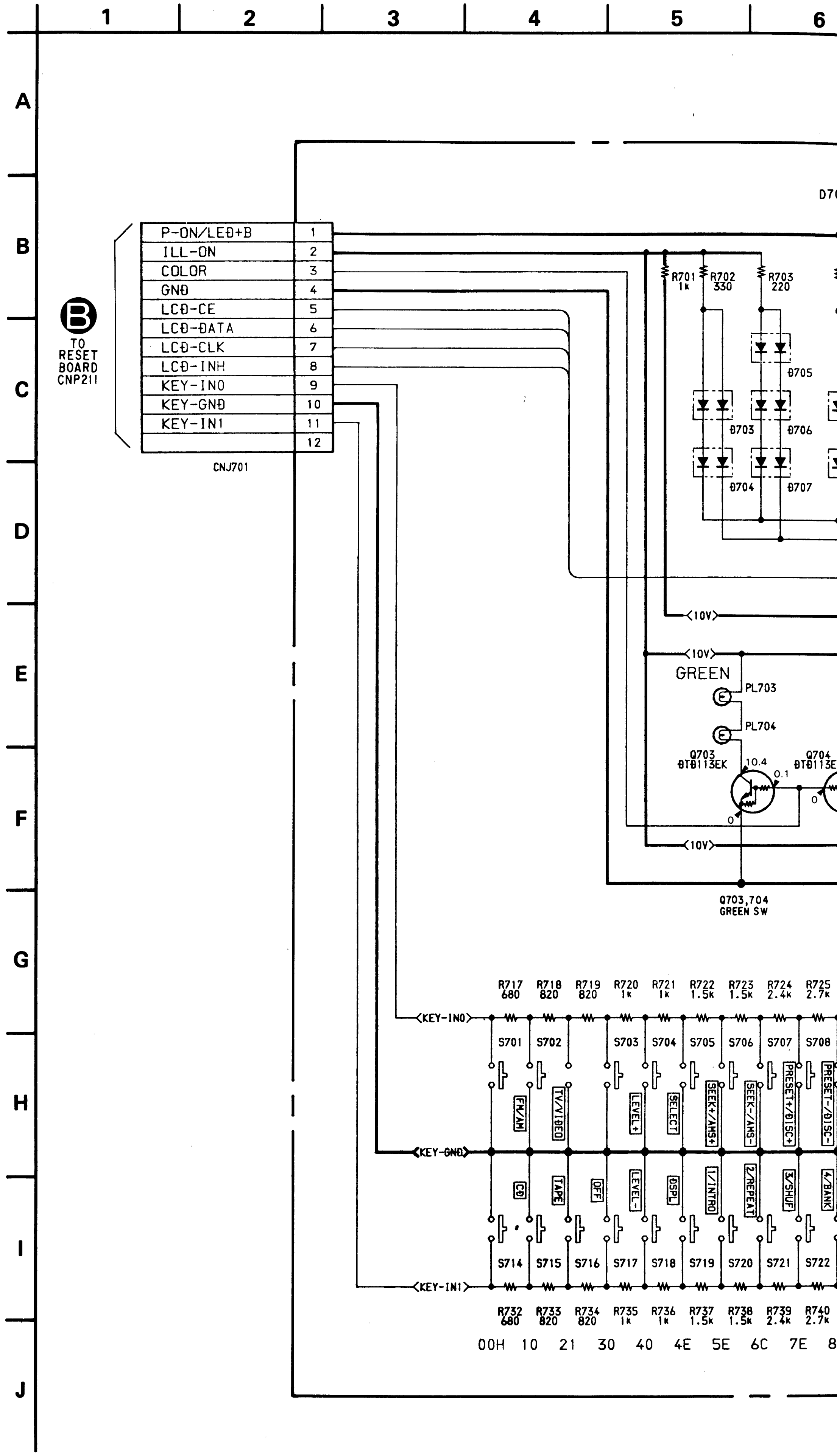
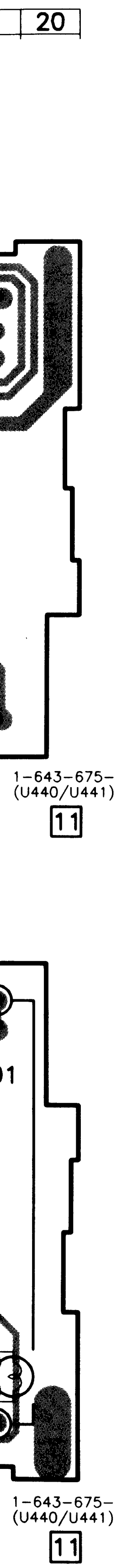
E)
D710
D711
D723
D724
D725
D712
D713
D718
D719
D720
D721
D722
R705
R706
1-643-675-
(U440/U441)
11

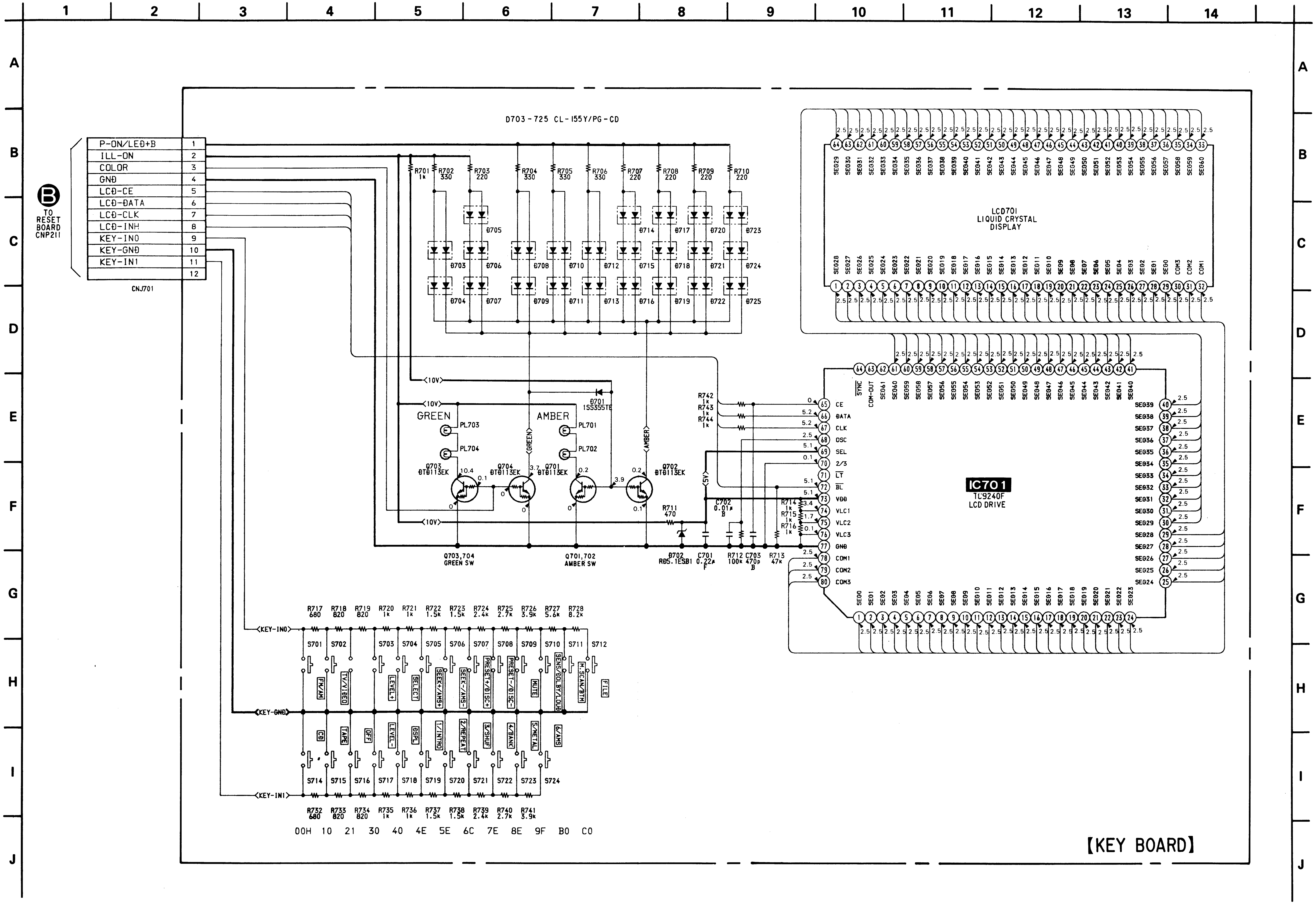


E)
LCD701
IC701
R742
R743
R714
R715
R716
R744
R701
Q703
Q701
Q704
Q702
D702
D701
PL701
PL702
PL703
PL704
S719
1/INTRO
S711
N.SCAN
/BTM
S718
DSPL
S721
3/SHUF
S720
2/REPEAT
S708
PRESET-
/DISC-
S705
SEEK+
/AMS+
S706
SEEK-
/AMS-
S710
SENS/
DOLBY/LOUD
S703
LEVEL+
S704
SELECT
S717
LEVEL-
S709
MUTE
1-643-675-
(U440/U441)
11



1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
J
B
TO
RESET
BOARD
CNP211
P-ON/LED+B
ILL-ON
COLOR
GND
LCD-CE
LCD-DATA
LCD-CLK
LCD-INH
KEY-IN0
KEY-GND
KEY-IN1
CNJ701
R701 1k
R702 330
R703 220
D705
D703
D706
D704
D707
<10V>
GREEN
PL703
PL704
Q703 DTB113EK
Q704 DTB113EK
Q703,704 GREEN SW
<KEY-IN0>
<KEY-GND>
<KEY-IN1>
R717 680
R718 820
R719 820
R720 1k
R721 1k
R722 1.5k
R723 1.5k
R724 2.4k
R725 2.7k
S701
S702
S703
S704
S705
S706
S707
S708
FM/AM
TV/VIDEO
LEVEL+
SELECT
SEEK+/AMS+
SEEK-/AMS-
PRESET+/DISC+
PRESET-/DISC-
CD
TAPE
OFF
LEVEL-
DSPL
1/INTRO
2/REPEAT
3/SHUF
4/BANK
S714
S715
S716
S717
S718
S719
S720
S721
S722
R732 680
R733 820
R734 820
R735 1k
R736 1k
R737 1.5k
R738 1.5k
R739 2.4k
R740 2.7k
00H
10
21
30
40
4E
5E
6C
7E


20
1-643-675-
(U440/U441)
11
1-643-675-
(U440/U441)
11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A
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C
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E
F
G
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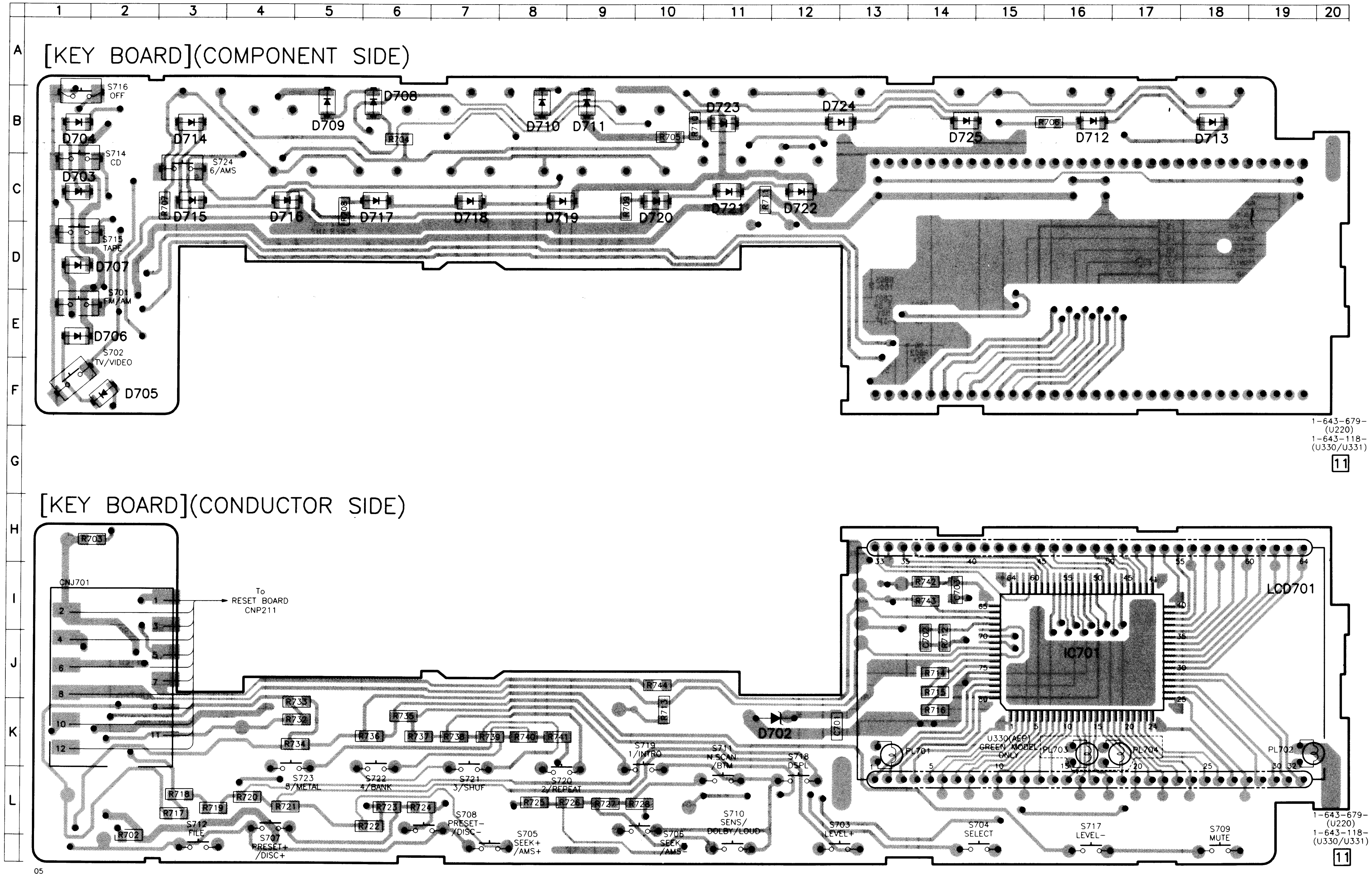
I
J
D703-725 CL-155Y/PG-CD
B
TO RESET BOARD CNP211
P-ON/LED+B
ILL-ON
COLOR
GND
LCD-CE
LCD-DATA
LCD-CLK
LCD-INH
KEY-IN0
KEY-GND
KEY-IN1
CNJ701
R701 1k
R702 330
R703 220
R704 330
R705 330
R706 330
R707 220
R708 220
R709 220
R710 220
D703
D704
D705
D706
D707
D708
D709
D710
D711
D712
D713
D714
D715
D716
D717
D718
D719
D720
D721
D722
D723
D724
D725
LCD701
LIQUID CRYSTAL DISPLAY
(10V)
D701
1SS355TE
GREEN
AMBER
PL703
PL704
PL701
PL702
Q703 DTD113EK
Q704 DTD113EK
Q701 DTD113EK
Q702 DTD113EK
Q703,704
GREEN SW
Q701,702
AMBER SW
(5V)
R711 470
D702 RD5.1ESB1
C701 0.22μ F
C702 0.01μ B
R712 100k
C703 470p B
R713 47k
R714 1k
R715 1k
R716 1k
R742 1k
R743 1k
R744 1k
IC701
TC9240F
LCD DRIVE
CE
DATA
CLK
OSC
SEL
2/3
LT
BL
VDD
VLC1
VLC2
VLC3
GND
COM1
COM2
COM3
SYNC
COM-OUT
R717 680
R718 820
R719 820
R720 1k
R721 1k
R722 1.5k
R723 1.5k
R724 2.4k
R725 2.7k
R726 3.9k
R727 5.6k
R728 8.2k
(KEY-IN0)
(KEY-GND)
(KEY-IN1)
S701
S702
S703
S704
S705
S706
S707
S708
S709
S710
S711
S712
FM/AM
TV/VIDEO
LEVEL+
SELECT
SEEK+/AMS+
SEEK-/AMS-
PRESET+/DISC+
PRESET-/DISC-
MUTE
SENS/DOLBY/LOUD
M.SCAN/BTM
FILE
CD
TAPE
OFF
LEVEL-
DSPL
1/INTRO
2/REPEAT
3/SHUF
4/BANK
5/METAL
6/AMS
S714
S715
S716
S717
S718
S719
S720
S721
S722
S723
S724
R732 680
R733 820
R734 820
R735 1k
R736 1k
R737 1.5k
R738 1.5k
R739 2.4k
R740 2.7k
R741 3.9k
00H 10 21 30 40 4E 5E 6C 7E 8E 9F B0 C0
【KEY BOARD】

3-7. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM (KEY SECTION)

- **See page 25 for IC Block Diagrams, page 26 for Semiconductor Lead Layouts.**

- **Semiconductor Location**

Ref. No.	Location
D701	L-18
D702	K-12
D703	C-1
D704	B-1
D705	F-2
D706	E-1
D707	D-1
D708	B-6
D709	B-5
D710	B-8
D711	B-9
D712	B-16
D713	B-18
D714	B-3
D715	C-3
D716	C-4
D717	C-6
D718	C-7
D719	C-8
D720	C-10
D721	C-11
D722	C-12
D723	B-11
D724	B-13
D725	B-14
IC701	J-16


[KEY BOARD](COMPONENT SIDE)
[KEY BOARD](CONDUCTOR SIDE)
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
A B C D E F G H I J K L
S716 OFF
S714 CD
S724 6/AMS
S715 TAPE
S701 FM/AM
S702 TV/VIDEO
D703 D704 D705 D706 D707 D708 D709 D710 D711 D712 D713 D714 D715 D716 D717 D718 D719 D720 D721 D722 D723 D724 D725
1-643-679-
(U220)
1-643-118-
(U330/U331)
11
CNJ701
To RESET BOARD CNP211
IC701
LCD701
D702
U330(AEP) GREEN MODEL ONLY
PL701 PL702 PL703 PL704
S723 5/METAL
S722 4/BANK
S721 3/SHUF
S720 2/REPEAT
S719 1/INTRO
S711 N SCAN /BTM
S718 DSPL
S712 FILE
S707 PRESET+ /DISC+
S708 PRESET- /DISC-
S705 SEEK+ /AMS+
S706 SEEK- /AMS-
S710 SENS/ DOLBY/LOUD
S703 LEVEL+
S704 SELECT
S717 LEVEL-
S709 MUTE
05

Note on Schematic Diagram:

- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- % : indicates tolerance.
- ▬▬ : B + Line.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from BAT and ACC terminals.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : Common

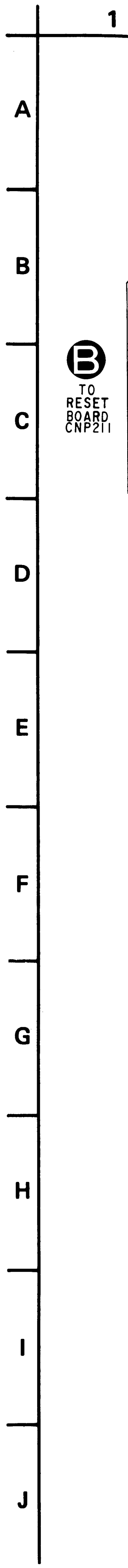
Note on Printed Wiring Board:

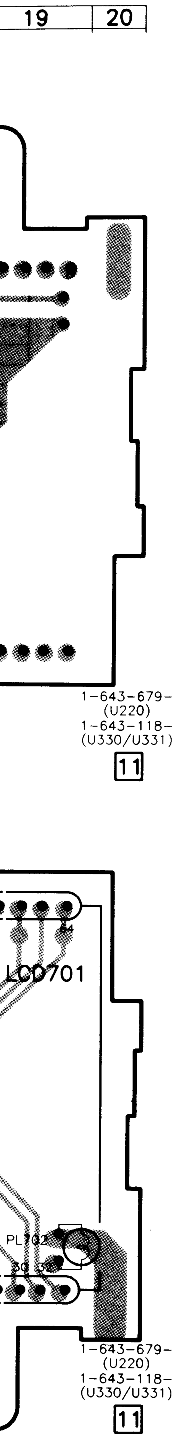
- ○—— : parts extracted from the component side.
- ● : Through hole.
- ▨ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

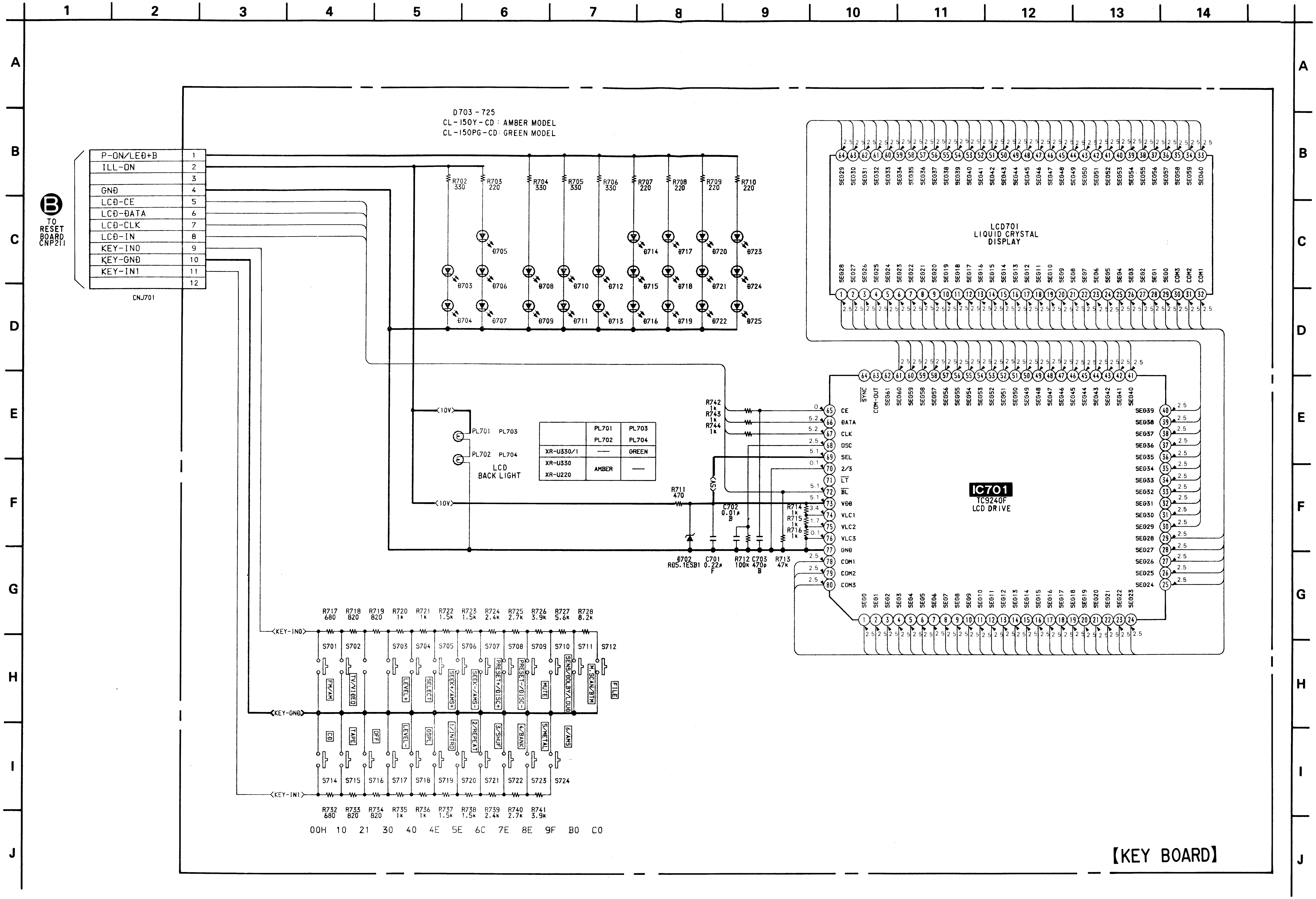
Caution:

Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.


1
A B C D E F G H I J
B
TO RESET BOARD CNP211



19
20
LCD701
PL702
1-643-679-
(U220)
1-643-118-
(U330/U331)
11



1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
D703 - 725
CL-150Y-CD : AMBER MODEL
CL-150PG-CD : GREEN MODEL
B
TO
RESET
BOARD
CNP211
P-ON/LED+B
ILL-ON
GND
LCD-CE
LCD-DATA
LCD-CLK
LCD-IN
KEY-IN0
KEY-GND
KEY-IN1
CNJ701
R702 330
R703 220
R704 330
R705 330
R706 330
R707 220
R708 220
R709 220
R710 220
D703
D704
D705
D706
D707
D708
D709
D710
D711
D712
D713
D714
D715
D716
D717
D718
D719
D720
D721
D722
D723
D724
D725
<10V>
PL701
PL702
PL703
PL704
LCD
BACK LIGHT
R742 1k
R743 1k
R744 1k
R711 470
<5V>
C702 0.01μ B
R714 1k
R715 1k
R716 1k
D702 RD5.1ESB1
C701 0.22μ F
R712 100k
C703 470p B
R713 47k
CE
DATA
CLK
OSC
SEL
2/3
LT
BL
VDD
VLC1
VLC2
VLC3
GND
COM1
COM2
COM3
SYNC
COM-OUT
IC701
TC9240F
LCD DRIVE
LCD701
LIQUID CRYSTAL
DISPLAY
SEG0 – SEG61
COM1
COM2
COM3
2.5
R717 680
R718 820
R719 820
R720 1k
R721 1k
R722 1.5k
R723 1.5k
R724 2.4k
R725 2.7k
R726 3.9k
R727 5.6k
R728 8.2k
S701
S702
S703
S704
S705
S706
S707
S708
S709
S710
S711
S712
FM/AM
TV/VIDEO
LEVEL+
SELECT
SEEK+/AMS+
SEEK-/AMS-
PRESET+/DISC+
PRESET-/DISC-
MUTE
SENS/DOLBY/LOUD
M.SCAN/BTM
FILE
CD
TAPE
OFF
LEVEL-
DSPL
1/INTRO
2/REPEAT
3/SHUF
4/BANK
5/METAL
6/AMS
S714
S715
S716
S717
S718
S719
S720
S721
S722
S723
S724
R732 680
R733 820
R734 820
R735 1k
R736 1k
R737 1.5k
R738 1.5k
R739 2.4k
R740 2.7k
R741 3.9k
00H 10 21 30 40 4E 5E 6C 7E 8E 9F B0 C0

	PL701 PL702	PL703 PL704
XR-U330/1	—	GREEN
XR-U330 XR-U220	AMBER	—

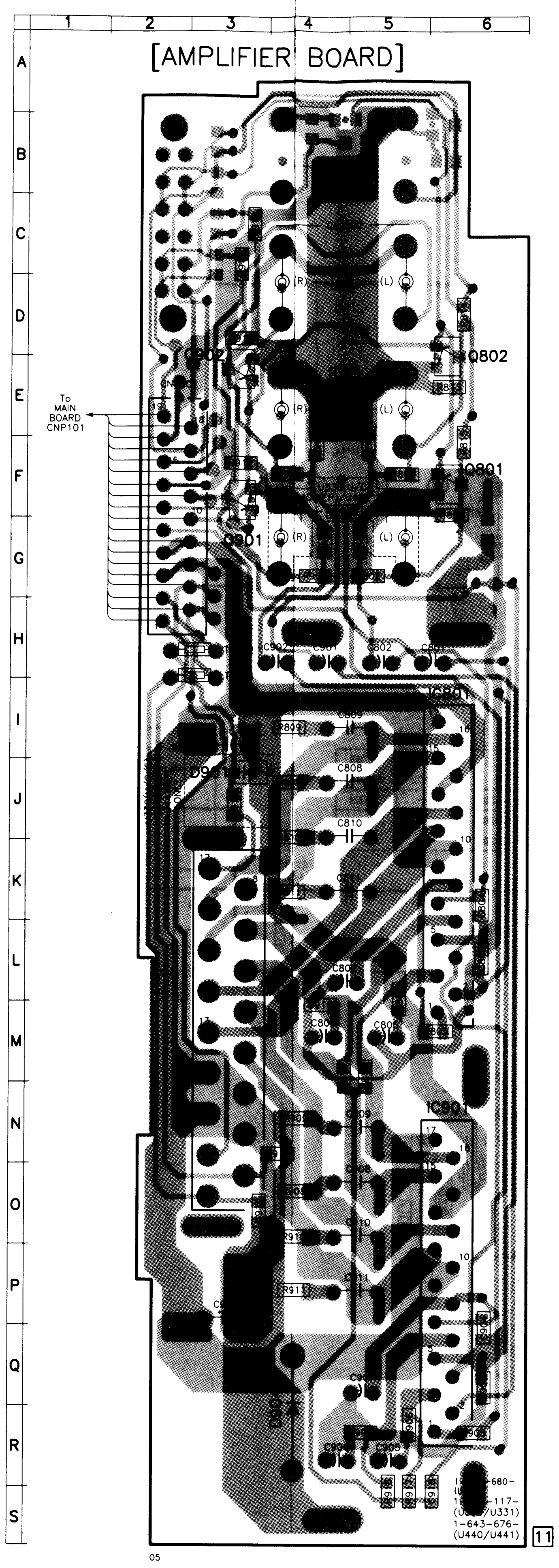
【KEY BOARD】

3-8. PRINTED WIRING BOARDS AND SCHEMATIC DIAGRAM (AMP SECTION)

- See page 25 for IC Block Diagrams, page 26 for Semiconductor Lead Layouts.

• Semiconductor Location

Ref. No.	Location
D901	J-3
D904	Q-4
IC801	I-6
IC901	N-6
Q801	F-6
Q802	E-6
Q901	F-3
Q902	E-3


1
2
3
4
5
6
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
Q
R
S
[AMPLIFIER BOARD]
To MAIN BOARD CNP101
Q902
Q802
Q801
Q901
(R)
(L)
C802
C901
C902
C801
IC801
R809
C809
C808
C810
D901
IC901
R911
D904
C905
1-643-680-
1-643-117-
(U331)
1-643-676-
(U440/U441)
11
05

Note on Schematic Diagram:

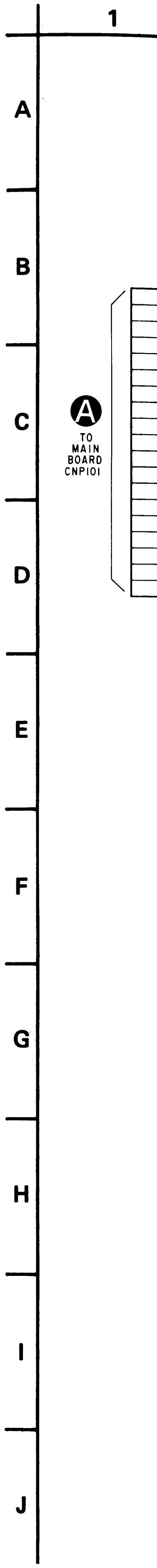
- All capacitors are in μF unless otherwise noted. pF: μμF 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and ¼ W or less unless otherwise specified.
- % : indicates tolerance.
- ▬▬ : B + Line.
- Power voltage is dc 14.4 V and fed with regulated dc power supply from BAT and ACC terminals.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  no mark : Common
- Signal path.
  ⇨ : FM

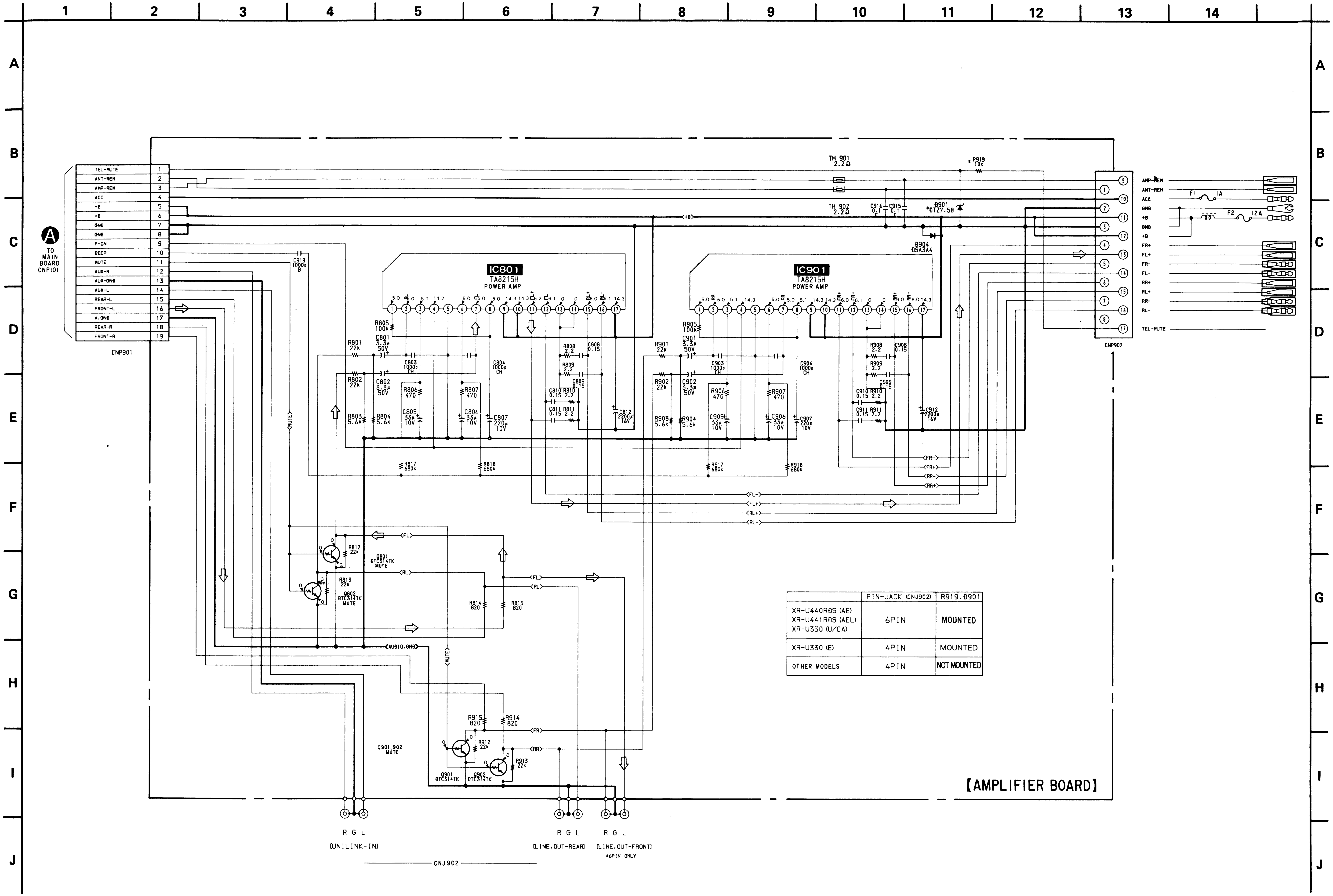
Note on Printed Wiring Board:

- o——— : parts extracted from the component side.
- ● : Through hole.
- ▒ : Pattern from the side which enables seeing.

(The other layers' patterns are not indicated.)

- ░ : Pattern of the rear side.


1
A
B
C
D
E
F
G
H
I
J
A
TO MAIN BOARD CNP101


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
TO MAIN BOARD CNP101
TEL-MUTE 1
ANT-REM 2
AMP-REM 3
ACC 4
+B 5
+B 6
GND 7
GND 8
P-ON 9
BEEP 10
MUTE 11
AUX-R 12
AUX-GND 13
AUX-L 14
REAR-L 15
FRONT-L 16
A.GND 17
REAR-R 18
FRONT-R 19
CNP901
C918 1000p B
IC801
TA8215H
POWER AMP
IC901
TA8215H
POWER AMP
R805 100k
C801 3.3μ 50V
R801 22k
R802 22k
C802 3.3μ 50V
C803 1000p CH
C804 1000p CH
R806 470
R807 470
C805 33μ 10V
C806 33μ 10V
C807 220μ 10V
R803 5.6k
R804 5.6k
R808 2.2
C808 0.15
R809 2.2
C809 0.15
C810 0.15
R810 2.2
C811 0.15
R811 2.2
C812 2200μ 16V
R817 680k
R818 680k
R905 100k
C901 3.3μ 50V
R901 22k
R902 22k
C902 3.3μ 50V
C903 1000p CH
C904 1000p CH
R906 470
R907 470
C905 33μ 10V
C906 33μ 10V
C907 220μ 10V
R903 5.6k
R904 5.6k
R908 2.2
C908 0.15
R909 2.2
C909 0.15
C910 0.15
R910 2.2
C911 0.15
R911 2.2
C912 2200μ 16V
R917 680k
R918 680k
TH 901 2.2Ω
TH 902 2.2Ω
C916 0.1 F
C915 0.1 F
*R919 10k
D901 *BTZ7.5B
D904 DSA3A4
<+B>
CNP902
AMP-REM
ANT-REM
ACC
GND
+B
GND
+B
FR+
FL+
FR-
FL-
RR+
RL+
RR-
RL-
TEL-MUTE
F1 1A
F2 12A
<FR->
<FR+>
<RR->
<RR+>
<FL->
<FL+>
<RL+>
<RL->
<FL>
<RL>
<FR>
<RR>
<MUTE>
<AUDIO.GND>
R812 22k
Q801 BTC514TK MUTE
R813 22k
Q802 BTC514TK MUTE
R814 820
R815 820
R915 820
R914 820
R912 22k
R913 22k
Q901.902 MUTE
Q901 BTC514TK
Q902 BTC514TK
R G L
[UNILINK-IN]
R G L
[LINE.OUT-REAR]
R G L
[LINE.OUT-FRONT]
*6PIN ONLY
CNJ902

	PIN-JACK (CNJ902)	R919.D901
XR-U440RDS (AE) XR-U441RDS (AEL) XR-U330 (U/CA)	6PIN	**MOUNTED**
XR-U330 (E)	4PIN	MOUNTED
OTHER MODELS	4PIN	**NOT MOUNTED**

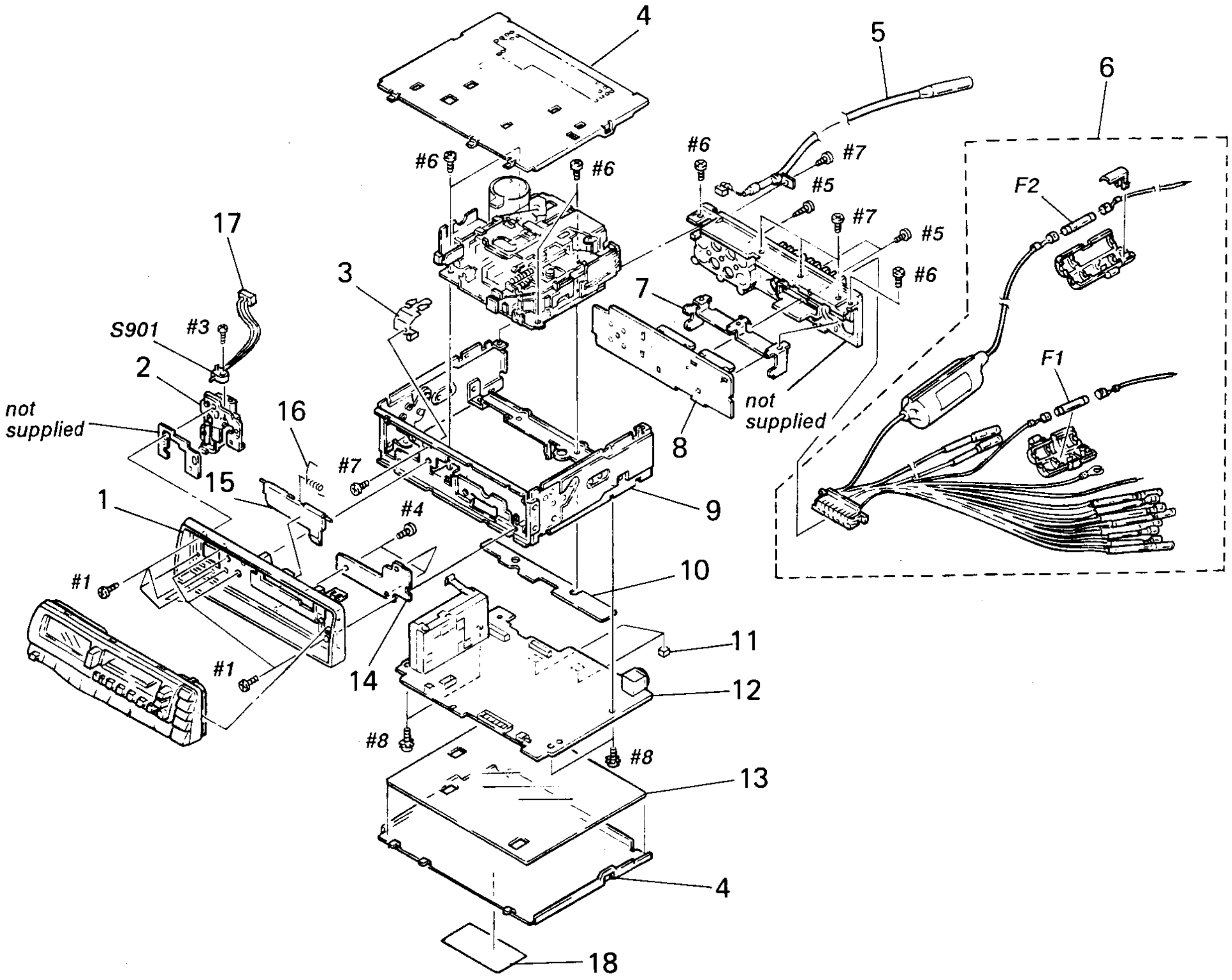
[AMPLIFIER BOARD]

SECTION 4
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Items marked "＊" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Hardware (# mark) list is given in the last of this parts list.

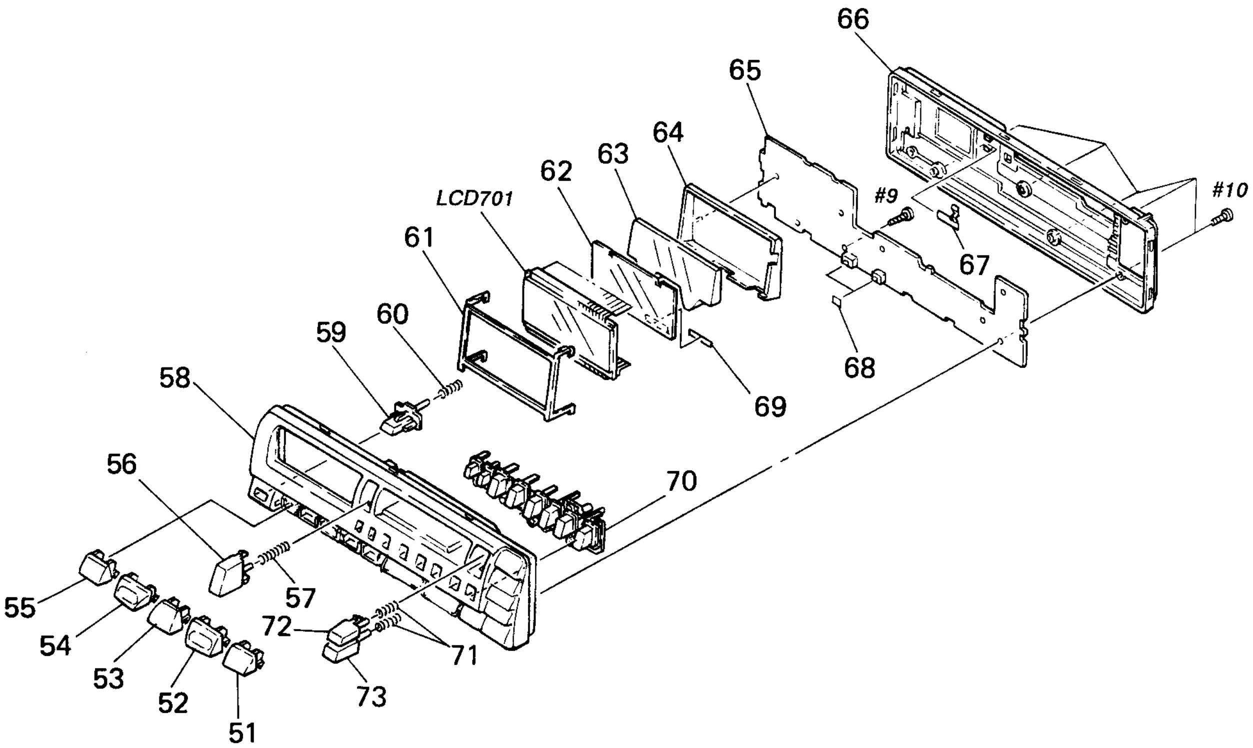
(1) GENERAL SECTION



Ref. No.	Part No.	Description	Remark
1	3-377-601-01	PANEL, SUB	
* 1	3-377-609-01	PANEL, SUB	
2	X-3364-564-1	LOCK ASSY	
* 3	3-377-825-01	PLATE, LOCK	
* 4	3-377-591-01	COVER	
5	1-574-339-11	CORD (WITH CONNECTOR)	
6	1-690-742-11	CORD (WITH CONNECTOR) (U330;E/U440RDS;AEP/U441RDS)	
* 7	3-377-590-01	BRACKET (IC)	
* 8	A-3273-919-A	AMPLIFIER BOARD, COMPLETE (U440RDS;G)	
* 8	A-3273-923-A	AMPLIFIER BOARD, COMPLETE (U440RDS;AEP/U441RDS)	
* 8	A-3273-930-A	AMPLIFIER BOARD, COMPLETE (U330;AEP/U331)	
* 8	A-3273-937-A	AMPLIFIER BOARD, COMPLETE (U220)	
* 8	A-3273-970-A	AMPLIFIER BOARD, COMPLETE (U330;US, CND)	
* 8	A-3273-973-A	AMPLIFIER BOARD, COMPLETE (U330;E)	
* 9	X-3364-495-1	CHASSIS ASSY	
* 10	3-379-684-01	PLATE, INSULATION	
11	9-911-841-XX	CUSHION, CASSETTE LID	
* 12	A-3273-917-A	MAIN BOARD, COMPLETE (U440RDS;G)	
* 12	A-3273-921-A	MAIN BOARD, COMPLETE (U440RDS; AEP)	
* 12	A-3273-927-A	MAIN BOARD, COMPLETE (U330;AEP)	
* 12	A-3273-934-A	MAIN BOARD, COMPLETE (U220)	
* 12	A-3273-966-A	MAIN BOARD, COMPLETE (U331)	
* 12	A-3273-968-A	MAIN BOARD, COMPLETE (U330;US, CND)	
* 12	A-3273-971-A	MAIN BOARD, COMPLETE (U330;E)	
* 12	A-3273-979-A	MAIN BOARD, COMPLETE (U441RDS)	

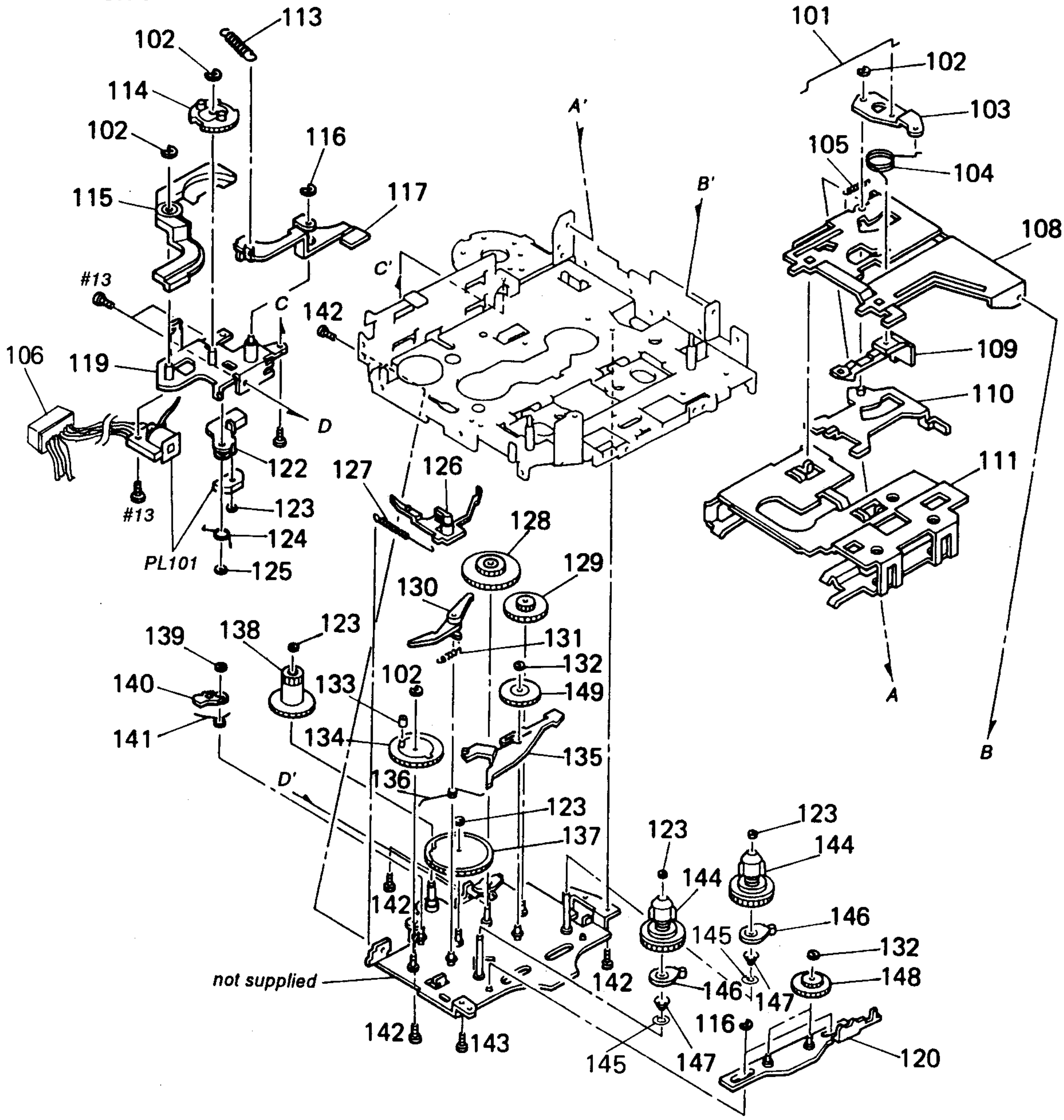
Ref. No.	Part No.	Description	Remark
* 13	3-377-593-11	INSULATOR	
* 14	1-643-119-11	RESET BOARD (U330/U330RDS/U331)	
* 14	1-643-674-11	RESET BOARD (U440RDS/U441RDS)	
* 14	1-643-678-11	RESET BOARD (U220)	
15	3-378-541-01	DOOR, CASSETTE (U330)	
15	3-378-541-11	DOOR, CASSETTE (U440RDS)	
15	3-378-541-21	DOOR, CASSETTE (U441RDS)	
15	3-378-541-31	DOOR, CASSETTE (U331)	
15	3-378-541-41	DOOR, CASSETTE (U220)	
16	3-377-892-01	SPRING (C DOOR) TORSION	
* 17	1-563-470-11	HOUSING, CONNECTOR 2P	
* 18	3-378-558-01	LABEL, MODEL NUMBER (E) (U330;E)	
* 18	3-378-559-01	LABEL, MODEL NUMBER (U) (U220;US)	
* 18	3-378-560-01	LABEL, MODEL NUMBER (CA) (U220;CND)	
* 18	3-378-563-01	LABEL, MODEL NUMBER (U440RDS;AEP)	
* 18	3-378-564-01	LABEL, MODEL NUMBER (AEL) (U441RDS)	
* 18	3-378-565-01	LABEL, MODEL NUMBER (U) (U330;US)	
* 18	3-378-566-01	LABEL, MODEL NUMBER (CA) (U330;CND)	
* 18	3-378-567-01	LABEL, MODEL NUMBER (AE) (U330;AEP:AMBER)	
* 18	3-378-568-01	LABEL, MODEL NUMBER (AE) (U330;AEP GREEN)	
* 18	3-378-569-01	LABEL, MODEL NUMBER (AEL) (U331)	
* 18	3-378-584-01	LABEL, MODEL NUMBER (AE6) (U440RDS;G)	
F1	1-532-414-11	FUSE, GLASS TUBE 1A	
F2	1-532-678-11	FUSE, GLASS TUBE 12A	
S901	1-570-771-11	SWITCH	

(2) FRONT PANEL SECTION



Ref. No.	Part No.	Description	Remark
51	3-377-567-12	BUTTON (LOUD)	
52	3-377-570-01	BUTTON (+)	
53	3-377-568-01	BUTTON (SELECT)	
54	3-377-569-01	BUTTON (-)	
55	3-377-573-01	BUTTON (MUTE)	
56	X-3364-782-1	BUTTON ASSY, EJECT	
57	3-378-540-01	SPRING (EJECT)	
58	X-3364-822-1	PANEL SUB ASSY, FRONT (U331)	
58	X-3364-823-1	PANEL SUB ASSY, FRONT (U220)	
58	X-3364-826-1	PANEL SUB ASSY, FRONT (U440RDS)	
58	X-3364-827-1	PANEL SUB ASSY, FRONT (U441RDS)	
58	X-3364-828-1	PANEL SUB ASSY, FRONT (U330;UC, CND)	
58	X-3364-829-1	PANEL SUB ASSY, FRONT (U330;AEP, E)	
59	3-377-577-01	BUTTON (RELEASE)	
60	3-375-373-01	SPRING (RELEASE)	
* 61	3-377-576-01	COVER (LCD)	
* 62	3-377-597-01	SHEET (REFLECTOR) (U440RDS/U441RDS)	
* 62	3-377-597-11	SHEET (REFLECTOR) (EXCEPT U330 AEP GREEN/U440RDS/U441RDS)	
* 62	3-377-597-21	SHEET (REFLECTOR) (U330 AEP GREEN)	
* 63	3-377-581-01	PLATE (LCD), LIGHT GUIDE	
* 64	3-377-578-01	HOLDER (LCD)	
* 65	A-3273-929-A	KEY BOARD, COMPLETE (U330:EXCEPT AEP GREEN/U331)	
* 65	A-3273-932-A	KEY BOARD, COMPLETE (U330:AEP GREEN)	
* 65	A-3273-938-A	KEY BOARD, COMPLETE (U220)	
* 65	A-3273-924-A	KEY BOARD, COMPLETE (U440RDS/U441RDS)	
66	3-377-600-01	PANEL, FRONT BACK	
67	3-377-826-01	PLATE (F-S), GROUND	
68	3-322-226-21	SPACER A	
69	3-380-311-01	SHEET, LCD	
70	3-377-602-01	BUTTON (PRESET)	
71	3-375-372-01	SPRING (F/R)	
72	3-377-603-01	BUTTON (FF)	
73	3-377-607-01	BUTTON (REW)	
LCD701	1-809-595-11	DISPLAY PANEL, LIQUID CRYSTAL (U330RDS/U440RDS/U441RDS)	
LCD701	1-809-595-21	DISPLAY PANEL, LIQUID CRYSTAL (U220/U330/U331)	

(3) MD SECTION-1



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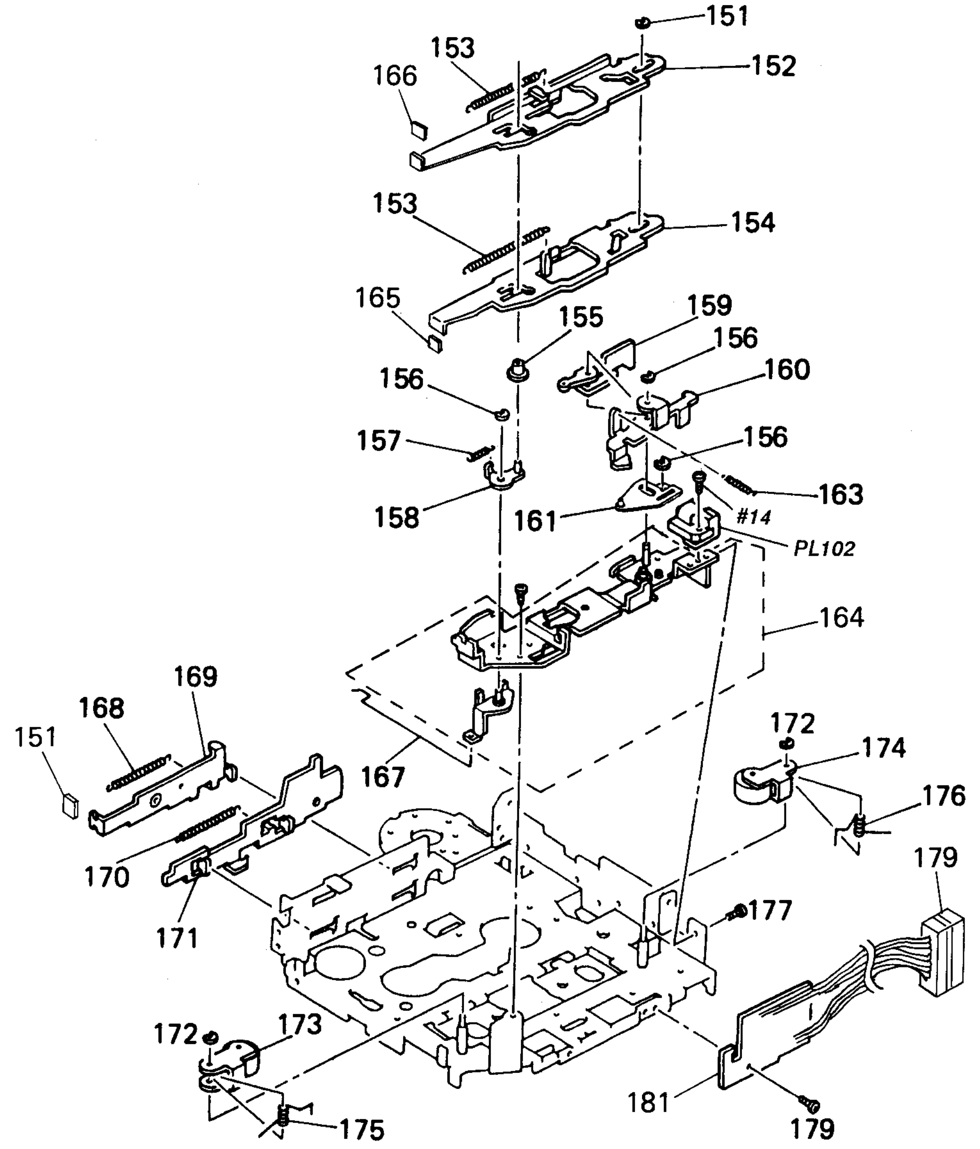
Ref. No.	Part No.	Description	Remark
101	3-392-969-01	LINK, RETURN	
* 103	3-392-932-01	PLATE, CENTER	
104	3-392-961-01	SPRING (B)	
105	3-392-953-01	SPRING	
* 106	3-379-122-01	CONNECTOR ASSY, 8P	
* 108	3-375-383-01	HANGER, CASSETTE	
109	3-392-972-01	HOOKER, TAPE	
* 110	3-392-921-01	LOCK ASSY, EJECT CAM	
* 111	3-375-384-01	HOLDER, CASSETTE	
113	3-397-436-01	SPRING, STAND-BY	
114	3-397-411-01	GEAR ASSY, STAND-BY	
115	3-397-462-01	ARM, REVERSE LOCK	
* 117	3-397-405-01	CAM ASSY, STAND-BY	
* 119	3-397-404-01	BRACKET ASSY, SOLENOID	
* 120	3-397-402-01	ARM (C) ASSY, F.R	
* 122	3-397-406-01	LOCK ASSY, STAND-BY GEAR	
123	3-676-387-00	POLY-SLIDER (DIA 1.6)	
124	3-397-441-01	SPRING, STAND-BY GEAR LOCK	
125	3-570-615-11	POLY-WASHER (DIA 1.2)	
126	3-397-460-01	RATCHET	
127	3-392-959-01	SPRING	
128	3-397-420-01	GEAR (B)	
129	3-397-419-01	GEAR (A)	
130	3-392-989-02	ARM, GEAR LOCK	
131	3-392-949-02	SPRING	
132	3-570-615-00	POLY-WASHER (DIA 1.2)	
133	3-392-944-01	COLLAR (CELECTER GEAR)	
134	3-392-987-01	GEAR, SELECTOR	
135	3-397-459-01	ARM, SENSOR	
136	3-397-429-01	SPRING, DASH	
137	3-397-458-01	GEAR, DETECTION	
138	3-397-426-01	GEAR, ROAD	
139	3-559-408-11	WASHER, POLYETHYLENE, DIA 1.2	
140	3-397-425-01	GEAR, SELECTOR LOCK	
141	3-397-440-01	SPRING, SELECTOR GEAR LOCK	
* 142	4-908-792-11	SCREW (B2X3), TAPPING, P1	
144	3-397-409-01	SPINDLE ASSY, REEL	
145	3-370-618-01	WASHER	
146	3-370-617-01	CAM ASSY, DETECTION	
147	3-370-619-01	SPRING, BACK TENSION	
148	3-397-422-01	GEAR, F.R	
149	3-397-421-01	GEAR, IDLE	
PL101	1-454-517-11		

(4) MD SECTION-2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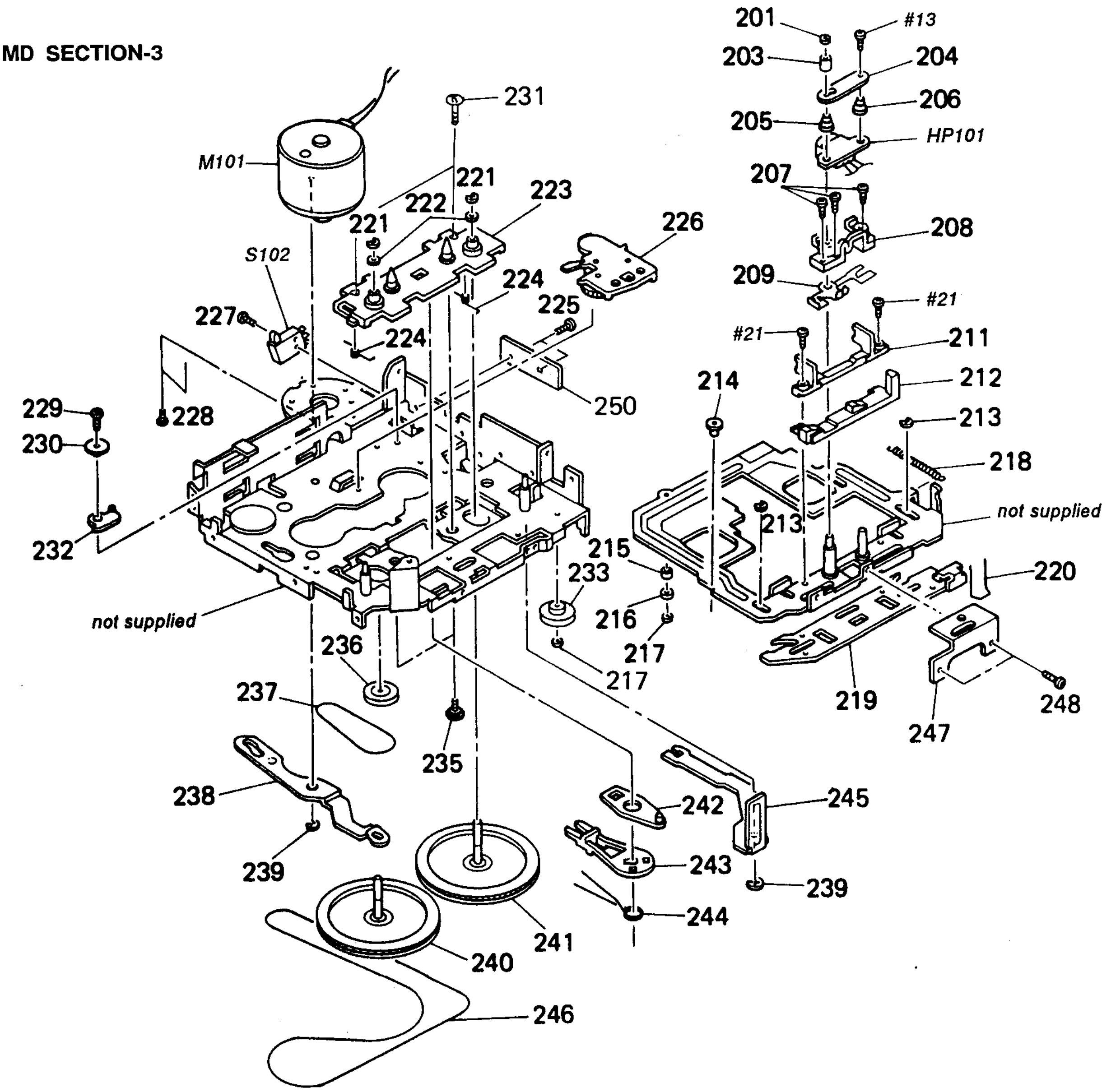
Ref. No.	Part No.	Description	Remark
* 151	3-379-140-01	BUTTON, EJECT	
* 152	3-379-125-01	LEVER (S), FF	
153	3-397-431-01	SPRING, FF/REW LEVER	
* 154	3-379-133-01	LEVER (S), REW	
155	3-392-994-01	ROLLER, PROGRAM	
157	3-397-439-01	SPRING, PROGRAM ARM	
159	3-392-903-01	ARM, RELEASE (EXCEPT U220)	
* 160	3-392-904-01	ARM (A), LOCK	
* 161	3-397-415-01	ARM (A) ASSY, F.R	
163	3-392-917-01	SPRING	
* 164	3-372-241-02	BRACKET ASSY (F), LEVER	
* 165	3-379-139-01	BUTTON, REW	
* 166	3-379-141-01	BUTTON, FF	
167	3-372-243-01	LINK (B), SELECTOR	
168	3-397-437-01	SPRING, EJECT LEVER	
* 169	3-379-144-01	LEVER (S), EJECT	
170	3-397-438-01	SPRING, EJECT CAM	
* 171	3-397-417-01	CAM ASSY, EJECT	
173	3-375-378-01	ARM (R) ASSY, PINCH	
174	3-375-377-01	ARM (F) ASSY, PINCH	
175	3-392-958-01	SPRING (R)	
176	3-392-957-01	SPRING (F)	
* 179	3-379-121-01	CONNECTOR ASSY, 7P (EXCEPT U220)	
179	3-379-123-01	CONNECTOR ASSY, 5P (U220)	
* 181	3-397-444-01	SWITCH BOARD	
PL102	1-454-464-12	SOLENOID, PLUNGER (EXCEPT U220)	

(5) MD SECTION-3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HP101
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M101
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Ref. No.	Part No.	Description	Remark
201	3-676-387-00	POLY-SLIDER (DIR. 1. 6)	
203	3-392-943-01	ROLLER, FF (EXCEPT U220)	
203	3-392-998-01	ROLLER (A), FF (U220)	
* 204	3-392-930-01	RETAINER, SPRING	
205	3-397-433-01	SPRING (B), ADJUSTOR ARM	
206	3-397-432-01	SPRING (A), ADJUSTOR ARM	
207	3-375-379-01	SCREW, AZIMUTH	
* 208	3-379-142-01	ARM (B), ADJUSTOR	
209	3-377-908-01	SHIM (X), ADJUSTOR	
211	3-392-984-01	GUIDE, TAPE	
212	3-377-909-01	LINK (X), ADJUSTOR	
214	3-397-428-01	COLLAR, H.P	
215	3-392-942-01	ROLLER (B), H.P	
216	3-392-945-01	ROLLER (A), H.P	
217	3-570-615-00	POLY-WASHER (DIA. 1. 2)	
218	3-392-952-01	SPRING	
* 219	3-397-401-01	ARM (A) ASSY, FR SELECTION	
220	3-392-962-01	SPRING	
221	3-590-768-00	RING (A), E	
222	3-701-437-11	POLY-SLIDER (A)	
* 223	3-375-381-01	BRACKET ASSY (X), CM	
224	3-392-963-01	SPRING (R)	
225	3-318-204-91	SCREW (M1. 7X4), TAPPING	
226	3-397-410-01	ARM ASSY, T.U	
227	3-318-203-11	SCREW (B1. 7X6), TAPPING	
* 230	3-397-427-01	COLLAR, MUTE ARM	
231	3-318-204-81	SCREW (M1. 7X3), TAPPING	
232	3-372-244-01	ARM (N), MUTE	
233	3-392-941-01	PULLEY (A), IDLE	
235	3-392-918-01	SCREW, EJECT HOOK	
236	3-397-418-01	GEAR, PULLEY	
237	3-397-442-01	BELT, SUB	
* 238	3-392-979-01	LEVER, REVERSE	
240	3-397-413-01	FLYWHEEL ASSY (BR)	
241	3-397-412-01	FLYWHEEL ASSY (BF)	
* 242	3-397-408-01	ARM (D) ASSY, F.R	
243	3-397-461-01	ARM, FF	
244	3-397-435-01	SPRING, FF ARM	
* 245	3-397-455-01	ARM (B), F.R	
246	3-397-443-01	BELT, MAIN	
* 247	3-397-463-01	REINFORCEMENT	
248	3-397-464-01	SCREW, REINFORCEMENT FITTING	
250	3-375-376-01	MUTE BOARD	
HP101	1-543-717-11	HEAD, MAGNETIC (PLAYBACK)	
M101	X-3365-046-1	MOTOR ASSY (CAPSTAN/REEL)	
S102	1-554-790-21	SWITCH, POWER (PACK IN)	

AMPLIFIER

SECTION 5
ELECTRICAL PARTS LIST

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor
  METAL OXIDE: Metal Oxide-film resistor
  F: nonflammable
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: μ, for example:
  uA...: μA..., uPA...: μPA...,
  uPB...: μPB..., uPC...: μPC...,
  uPD...: μPD...
- CAPACITORS
  uF: μF
- COILS
  uH: μH

When including parts by reference number, please include the board name.

Ref. No.	Part No.	Description				Remark
*	A-3273-919-A	AMPLIFIER BOARD, COMPLETE (U440RDS; G) **				
*	A-3273-923-A	AMPLIFIER BOARD, COMPLETE ************************** (U440RDS; AEP/U441RDS)				
*	A-3273-930-A	AMPLIFIER BOARD, COMPLETE ************************** (U330; AEP/U331)				
*	A-3273-937-A	AMPLIFIER BOARD, COMPLETE (U220) **********************************				
*	A-3273-970-A	AMPLIFIER BOARD, COMPLETE (U330; US, CND) **				
*	A-3273-973-A	AMPLIFIER BOARD, COMPLETE (U330; E) *************************************				
*	3-377-590-01	BRACKET (IC)				
		< CAPACITOR >				
C801	1-128-113-11	ELECT	3.3uF	20%	50V	
C802	1-128-113-11	ELECT	3.3uF	20%	50V	
C803	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C804	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C805	1-128-112-11	ELECT	33uF	20%	10V	
C806	1-128-112-11	ELECT	33uF	20%	10V	
C807	1-126-335-11	ELECT	220uF	20%	10V	
C808	1-106-224-00	MYLAR	0.15uF	5%	100V	
C809	1-106-224-00	MYLAR	0.15uF	5%	100V	
C810	1-106-224-00	MYLAR	0.15uF	5%	100V	
C811	1-106-224-00	MYLAR	0.15uF	5%	100V	
C812	1-128-355-91	ELECT	2200uF	20%	16V	
C901	1-128-113-11	ELECT	3.3uF	20%	50V	
C902	1-128-113-11	ELECT	3.3uF	20%	50V	
C903	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C904	1-163-275-11	CERAMIC CHIP	0.001uF	5%	50V	
C905	1-128-112-11	ELECT	33uF	20%	10V	
C906	1-128-112-11	ELECT	33uF	20%	10V	
C907	1-126-335-11	ELECT	220uF	20%	10V	
C908	1-106-224-00	MYLAR	0.15uF	5%	100V	
C909	1-106-224-00	MYLAR	0.15uF	5%	100V	
C910	1-106-224-00	MYLAR	0.15uF	5%	100V	
C911	1-106-224-00	MYLAR	0.15uF	5%	100V	
C912	1-128-355-91	ELECT	2200uF	20%	16V	
C915	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C916	1-163-038-00	CERAMIC CHIP	0.1uF		25V	
C918	1-163-009-11	CERAMIC CHIP	0.001uF	10%	50V	
		< JACK >				
CNJ902	1-691-683-31	JACK, PIN 4P (U220/U330; AEP/U331/U440RDS; G)				
CNJ902	1-691-684-31	JACK, PIN 6P (U330; US, CND/U440RDS; AEP/U441RDS)				
		< CONNECTOR >				
CNP901	1-691-883-21	PLUG, CONNECTOR 19P				
CNP902	1-691-685-11	CONNECTOR 17P				
		< DIODE >				
D901	8-719-977-16	DIODE DTZ7.5B (U330; US, CND, E/U440RDS; AEP/U441RDS)				
D904	8-719-989-16	DIODE 1S2472				
		< IC >				
IC801	8-759-243-27	IC TA8215H				
IC901	8-759-243-27	IC TA8215H				
		< TRANSISTOR >				
Q801	8-729-920-21	TRANSISTOR	DTC314TKH04			
Q802	8-729-920-21	TRANSISTOR	DTC314TKH04			
Q901	8-729-920-21	TRANSISTOR	DTC314TKH04			
Q902	8-729-920-21	TRANSISTOR	DTC314TKH04			
		< RESISTOR >				
R801	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R802	1-216-081-00	METAL CHIP	22K	5%	1/10W	
R803	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R804	1-216-067-00	METAL CHIP	5.6K	5%	1/10W	
R805	1-216-097-00	METAL CHIP	100K	5%	1/10W	
R806	1-216-041-00	METAL CHIP	470	5%	1/10W	
R807	1-216-041-00	METAL CHIP	470	5%	1/10W	
R808	1-216-134-00	METAL CHIP	2.2	5%	1/8W	
R809	1-216-134-00	METAL CHIP	2.2	5%	1/8W	
R810	1-216-134-00	METAL CHIP	2.2	5%	1/8W	

Ref. No.	Part No.	Description	Remark
R811	1-216-134-00	METAL CHIP 2.2 5%	1/8W
R812	1-216-081-00	METAL CHIP 22K 5%	1/10W
R813	1-216-081-00	METAL CHIP 22K 5%	1/10W
R814	1-216-047-00	METAL CHIP 820 5%	1/10W
R815	1-216-047-00	METAL CHIP 820 5%	1/10W
R817	1-216-117-00	METAL CHIP 680K 5%	1/10W
R818	1-216-117-00	METAL CHIP 680K 5%	1/10W
R901	1-216-081-00	METAL CHIP 22K 5%	1/10W
R902	1-216-081-00	METAL CHIP 22K 5%	1/10W
R903	1-216-067-00	METAL CHIP 5.6K 5%	1/10W
R904	1-216-067-00	METAL CHIP 5.6K 5%	1/10W
R905	1-216-097-00	METAL CHIP 100K 5%	1/10W
R906	1-216-041-00	METAL CHIP 470 5%	1/10W
R907	1-216-041-00	METAL CHIP 470 5%	1/10W
R908	1-216-134-00	METAL CHIP 2.2 5%	1/8W
R909	1-216-134-00	METAL CHIP 2.2 5%	1/8W
R910	1-216-134-00	METAL CHIP 2.2 5%	1/8W
R911	1-216-134-00	METAL CHIP 2.2 5%	1/8W
R912	1-216-081-00	METAL CHIP 22K 5%	1/10W
R913	1-216-081-00	METAL CHIP 22K 5%	1/10W
R914	1-216-047-00	METAL CHIP 820 5%	1/10W
R915	1-216-047-00	METAL CHIP 820 5%	1/10W
R917	1-216-117-00	METAL CHIP 680K 5%	1/10W
R918	1-216-117-00	METAL CHIP 680K 5%	1/10W
R919	1-216-073-00	METAL CHIP 10K 5%	1/10W (U330; US,CND,E/U440RDS; AEP/U441RDS)
		< THERMISTOR >	
TH901	1-809-148-11	THERMISTOR, POSITIVE	
TH902	1-809-148-11	THERMISTOR, POSITIVE	

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Ref. No.	Part No.	Description	Remark
*	A-3273-924-A	KEY BOARD, COMPLETE (U440RDS/U441RDS) **************************************	
*	A-3273-929-A	KEY BOARD, COMPLETE ******************** (U330; EXCEPT AEP GREEN/U331)	
*	A-3273-932-A	KEY BOARD, COMPLETE (U330; AEP GREEN) **************************************	
*	A-3273-938-A	KEY BOARD, COMPLETE (U220) ***************************	
*	3-377-576-01	COVER (LCD)	
*	3-377-581-01	PLATE (LCD), LIGHT GUIDE	
*	3-377-597-01	SHEET (REFLECTOR)	
		< CAPACITOR >	
C701	1-164-222-11	CERAMIC CHIP 0.22uF	25V
C702	1-164-232-11	CERAMIC CHIP 0.01uF	50V
C703	1-163-005-11	CERAMIC CHIP 470PF 10%	50V
		< JACK >	
* CNJ701	1-691-557-11	PIN, CONNECTOR 12P	
		< DIODE >	
D701	8-719-988-62	DIODE 1SS355 (U440RDS/U441RDS)	
D702	8-719-109-84	DIODE RD5.1ES-B1	
D703	8-719-987-41	LED CL-150Y-CD (EXCEPT U330;AEP GREEN/U440RDS/U441RDS)	
D703	8-719-987-43	LED CL-150PG-CD (U330; AEP GREEN)	
D703	8-719-987-45	LED CL-155Y/PG-CD (U440RDS/U441RDS)	
D704	8-719-987-41	LED CL-150Y-CD (EXCEPT U330;AEP GREEN/U440RDS/U441RDS)	
D704	8-719-987-43	LED CL-150PG-CD (U330; AEP GREEN)	
D704	8-719-987-45	LED CL-155Y/PG-CD (U440RDS/U441RDS)	
D705	8-719-987-41	LED CL-150Y-CD (EXCEPT U330;AEP GREEN/U440RDS/U441RDS)	
D705	8-719-987-43	LED CL-150PG-CD (U330; AEP GREEN)	
D705	8-719-987-45	LED CL-155Y/PG-CD (U440RDS/U441RDS)	
D706	8-719-987-41	LED CL-150Y-CD (EXCEPT U330;AEP GREEN/U440RDS/U441RDS)	
D706	8-719-987-43	LED CL-150PG-CD (U330; AEP GREEN)	
D706	8-719-987-45	LED CL-155Y/PG-CD (U440RDS/U441RDS)	
D707	8-719-987-41	LED CL-150Y-CD (EXCEPT U330;AEP GREEN/U440RDS/U441RDS)	
D707	8-719-987-43	LED CL-150PG-CD (U330; AEP GREEN)	
D707	8-719-987-45	LED CL-155Y/PG-CD (U440RDS/U441RDS)	
D708	8-719-987-41	LED CL-150Y-CD (EXCEPT U330;AEP GREEN/U440RDS/U441RDS)	
D708	8-719-987-43	LED CL-150PG-CD (U330; AEP GREEN)	
D708	8-719-987-45	LED CL-155Y/PG-CD (U440RDS/U441RDS)	

KEY

Ref. No.	Part No.	Description	Remark
D709	8-719-987-41	LED CL-150Y-CD	(EXCEPT U330;AEP GREEN/U440RDS/U441RDS)
D709	8-719-987-43	LED CL-150PG-CD	(U330; AEP GREEN)
D709	8-719-987-45	LED CL-155Y/PG-CD	(U440RDS/U441RDS)
D710	8-719-987-41	LED CL-150Y-CD	(EXCEPT U330;AEP GREEN/U440RDS/U441RDS)
D710	8-719-987-43	LED CL-150PG-CD	(U330; AEP GREEN)
D710	8-719-987-45	LED CL-155Y/PG-CD	(U440RDS/U441RDS)
D711	8-719-987-41	LED CL-150Y-CD	(EXCEPT U330;AEP GREEN/U440RDS/U441RDS)
D711	8-719-987-43	LED CL-150PG-CD	(U330; AEP GREEN)
D711	8-719-987-45	LED CL-155Y/PG-CD	(U440RDS/U441RDS)
D712	8-719-987-41	LED CL-150Y-CD	(EXCEPT U330;AEP GREEN/U440RDS/U441RDS)
D712	8-719-987-43	LED CL-150PG-CD	(U330; AEP GREEN)
D712	8-719-987-45	LED CL-155Y/PG-CD	(U440RDS/U441RDS)
D713	8-719-987-41	LED CL-150Y-CD	(EXCEPT U330;AEP GREEN/U440RDS/U441RDS)
D713	8-719-987-43	LED CL-150PG-CD	(U330; AEP GREEN)
D713	8-719-987-45	LED CL-155Y/PG-CD	(U440RDS/U441RDS)
D714	8-719-987-41	LED CL-150Y-CD	(EXCEPT U330;AEP GREEN/U440RDS/U441RDS)
D714	8-719-987-43	LED CL-150PG-CD	(U330; AEP GREEN)
D714	8-719-987-45	LED CL-155Y/PG-CD	(U440RDS/U441RDS)
D715	8-719-987-41	LED CL-150Y-CD	(EXCEPT U330;AEP GREEN/U440RDS/U441RDS)
D715	8-719-987-43	LED CL-150PG-CD	(U330; AEP GREEN)
D715	8-719-987-45	LED CL-155Y/PG-CD	(U440RDS/U441RDS)
D716	8-719-987-41	LED CL-150Y-CD	(EXCEPT U330;AEP GREEN/U440RDS/U441RDS)
D716	8-719-987-43	LED CL-150PG-CD	(U330; AEP GREEN)
D716	8-719-987-45	LED CL-155Y/PG-CD	(U440RDS/U441RDS)
D717	8-719-987-41	LED CL-150Y-CD	(EXCEPT U330;AEP GREEN/U440RDS/U441RDS)
D717	8-719-987-43	LED CL-150PG-CD	(U330; AEP GREEN)
D717	8-719-987-45	LED CL-155Y/PG-CD	(U440RDS/U441RDS)
D718	8-719-987-41	LED CL-150Y-CD	(EXCEPT U330;AEP GREEN/U440RDS/U441RDS)
D718	8-719-987-43	LED CL-150PG-CD	(U330; AEP GREEN)
D718	8-719-987-45	LED CL-155Y/PG-CD	(U440RDS/U441RDS)
D719	8-719-987-41	LED CL-150Y-CD	(EXCEPT U330;AEP GREEN/U440RDS/U441RDS)
D719	8-719-987-43	LED CL-150PG-CD	(U330; AEP GREEN)
D719	8-719-987-45	LED CL-155Y/PG-CD	(U440RDS/U441RDS)
D720	8-719-987-41	LED CL-150Y-CD	(EXCEPT U330;AEP GREEN/U440RDS/U441RDS)
D720	8-719-987-43	LED CL-150PG-CD	(U330; AEP GREEN)
D720	8-719-987-45	LED CL-155Y/PG-CD	(U440RDS/U441RDS)

Ref. No.	Part No.	Description	Remark
D721	8-719-987-41	LED CL-150Y-CD	(EXCEPT U330;AEP GREEN/U440RDS/U441RDS)
D721	8-719-987-43	LED CL-150PG-CD	(U330; AEP GREEN)
D721	8-719-987-45	LED CL-155Y/PG-CD	(U440RDS/U441RDS)
D722	8-719-987-41	LED CL-150Y-CD	(EXCEPT U330;AEP GREEN/U440RDS/U441RDS)
D722	8-719-987-43	LED CL-150PG-CD	(U330; AEP GREEN)
D722	8-719-987-45	LED CL-155Y/PG-CD	(U440RDS/U441RDS)
D723	8-719-987-41	LED CL-150Y-CD	(EXCEPT U330;AEP GREEN/U440RDS/U441RDS)
D723	8-719-987-43	LED CL-150PG-CD	(U330; AEP GREEN)
D723	8-719-987-45	LED CL-155Y/PG-CD	(U440RDS/U441RDS)
D724	8-719-987-41	LED CL-150Y-CD	(EXCEPT U330;AEP GREEN/U440RDS/U441RDS)
D724	8-719-987-43	LED CL-150PG-CD	(U330; AEP GREEN)
D724	8-719-987-45	LED CL-155Y/PG-CD	(U440RDS/U441RDS)
D725	8-719-987-41	LED CL-150Y-CD	(EXCEPT U330;AEP GREEN/U440RDS/U441RDS)
D725	8-719-987-43	LED CL-150PG-CD	(U330; AEP GREEN)
D725	8-719-987-45	LED CL-155Y/PG-CD	(U440RDS/U441RDS)

< IC >

Ref. No.	Part No.	Description	Remark
IC701	8-759-246-16	IC TC9240F	

< LIQUID CRYSTAL DISPLAY >

Ref. No.	Part No.	Description	Remark
LCD701	1-809-595-11	DISPLAY PANEL, LIQUID CRYSTAL	(U440RDS/U441RDS)
LCD701	1-809-595-21	DISPLAY PANEL, LIQUID CRYSTAL	(U220/U330/U331)

< PILOT LAMP >

Ref. No.	Part No.	Description	Remark
PL701	1-518-633-21	LAMP, PILOT	(EXCEPT U330; AEP GREEN/U440RDS/U441RDS)
PL701	1-518-646-11	LAMP, PILOT	(U440RDS/U441RDS)
PL702	1-518-633-21	LAMP, PILOT	(EXCEPT U330; AEP GREEN/U440RDS/U441RDS)
PL702	1-518-646-11	LAMP, PILOT	(U440RDS/U441RDS)
PL703	1-518-648-11	LAMP, PILOT	(U440RDS/U441RDS)
PL703	1-518-699-01	LAMP, PILOT	(U330; AEP GREEN)
PL704	1-518-648-11	LAMP, PILOT	(U440RDS/U441RDS)
PL704	1-518-699-01	LAMP, PILOT	(U330; AEP GREEN)

< TRANSISTOR >

Ref. No.	Part No.	Description	Remark
Q701	8-729-904-66	TRANSISTOR DTD113EK	(U440RDS/U441RDS)
Q702	8-729-904-66	TRANSISTOR DTD113EK	(U440RDS/U441RDS)
Q703	8-729-904-66	TRANSISTOR DTD113EK	(U440RDS/U441RDS)
Q704	8-729-904-66	TRANSISTOR DTD113EK	(U440RDS/U441RDS)

Ref. No.	Part No.	Description	Remark
		< RESISTOR >	
R701	1-216-049-00	METAL CHIP 1K 5% 1/10W	(U440RDS/U441RDS)
R702	1-216-037-00	METAL CHIP 330 5% 1/10W	
R703	1-216-033-00	METAL CHIP 220 5% 1/10W	
R704	1-216-037-00	METAL CHIP 330 5% 1/10W	
R705	1-216-037-00	METAL CHIP 330 5% 1/10W	
R706	1-216-037-00	METAL CHIP 330 5% 1/10W	
R707	1-216-033-00	METAL CHIP 220 5% 1/10W	
R708	1-216-033-00	METAL CHIP 220 5% 1/10W	
R709	1-216-033-00	METAL CHIP 220 5% 1/10W	
R710	1-216-033-00	METAL CHIP 220 5% 1/10W	
R711	1-216-041-00	METAL CHIP 470 5% 1/10W	
R712	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R713	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R714	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R715	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R716	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R717	1-216-647-11	METAL CHIP 680 0.5% 1/10W	
R718	1-216-649-11	METAL CHIP 820 0.5% 1/10W	
R719	1-216-649-11	METAL CHIP 820 0.5% 1/10W	
R720	1-216-651-11	METAL CHIP 1K 0.5% 1/10W	
R721	1-216-651-11	METAL CHIP 1K 0.5% 1/10W	
R722	1-216-655-11	METAL CHIP 1.5K 0.5% 1/10W	
R723	1-216-655-11	METAL CHIP 1.5K 0.5% 1/10W	
R724	1-216-660-11	METAL CHIP 2.4K 0.5% 1/10W	
R725	1-216-661-11	METAL CHIP 2.7K 0.5% 1/10W	
R726	1-216-665-11	METAL CHIP 3.9K 0.5% 1/10W	
R727	1-216-669-11	METAL CHIP 5.6K 0.5% 1/10W	
R728	1-216-673-11	METAL CHIP 8.2K 0.5% 1/10W	
R732	1-216-647-11	METAL CHIP 680 0.5% 1/10W	
R733	1-216-649-11	METAL CHIP 820 0.5% 1/10W	
R734	1-216-649-11	METAL CHIP 820 0.5% 1/10W	
R735	1-216-651-11	METAL CHIP 1K 0.5% 1/10W	
R736	1-216-651-11	METAL CHIP 1K 0.5% 1/10W	
R737	1-216-655-11	METAL CHIP 1.5K 0.5% 1/10W	
R738	1-216-655-11	METAL CHIP 1.5K 0.5% 1/10W	
R739	1-216-660-11	METAL CHIP 2.4K 0.5% 1/10W	
R740	1-216-661-11	METAL CHIP 2.7K 0.5% 1/10W	
R741	1-216-665-11	METAL CHIP 3.9K 0.5% 1/10W	
R742	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R743	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R744	1-216-049-00	METAL CHIP 1K 5% 1/10W	
		< SWITCH >	
S701	1-692-037-11	SWITCH, KEY BOARD (FM/AM)	
S702	1-692-037-11	SWITCH, KEY BOARD (AF/TA)	
S703	1-572-704-21	SWITCH, KEY BOARD (+)	
S704	1-572-704-21	SWITCH, KEY BOARD (SEL)	
S705	1-572-704-21	SWITCH, KEY BOARD (SEEK: +)	
S706	1-572-704-21	SWITCH, KEY BOARD (SEEK: -)	
S707	1-572-704-21	SWITCH, KEY BOARD (PRESET: +)	
S708	1-572-704-21	SWITCH, KEY BOARD (PRESET: -)	
S709	1-572-704-21	SWITCH, KEY BOARD (MUTE)	
S710	1-572-704-21	SWITCH, KEY BOARD (SENS/LOUD)	
S711	1-572-704-21	SWITCH, KEY BOARD (M.SCAN/BTM)	
S712	1-572-704-21	SWITCH, KEY BOARD (LIST)	
S714	1-692-037-11	SWITCH, KEY BOARD (CP)	
S715	1-692-037-11	SWITCH, KEY BOARD (TAPE)	
S716	1-692-037-11	SWITCH, KEY BOARD (OFF)	
S717	1-572-704-21	SWITCH, KEY BOARD (-)	
S718	1-572-704-21	SWITCH, KEY BOARD (DSPL)	
S719	1-572-704-21	SWITCH, KEY BOARD (1)	
S720	1-572-704-21	SWITCH, KEY BOARD (2)	
S721	1-572-704-21	SWITCH, KEY BOARD (3)	
S722	1-572-704-21	SWITCH, KEY BOARD (4)	
S723	1-572-704-21	SWITCH, KEY BOARD (5)	
S724	1-692-037-11	SWITCH, KEY BOARD (6)	

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Ref. No.	Part No.	Description	Remark
*	A-3273-917-A	MAIN BOARD, COMPLETE (U440RDS; G)	
		**********************************	
*	A-3273-921-A	MAIN BOARD, COMPLETE (U440RDS; AEP)	
		************************************	
*	A-3273-927-A	MAIN BOARD, COMPLETE (U330; AEP)	
		********************************	
*	A-3273-934-A	MAIN BOARD, COMPLETE (U220)	
		***************************	
*	A-3273-968-A	MAIN BOARD, COMPLETE (U330; US,CND)	
		************************************	
*	A-3273-971-A	MAIN BOARD, COMPLETE (U330; E)	
		******************************	
*	A-3273-979-A	MAIN BOARD, COMPLETE (U441RDS)	
		******************************	
*	A-3273-966-A	MAIN BOARD, COMPLETE (U331)	
		***************************	
		< CAPACITOR >	
C5	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C6	1-124-589-11	ELECT 47uF 20% 16V	
C7	1-164-343-11	CERAMIC CHIP 0.056uF 10% 25V	
C8	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C9	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C20	1-124-584-00	ELECT 100uF 20% 10V	
C21	1-136-165-00	FILM 0.1uF 5% 50V	
C22	1-130-479-00	MYLAR 0.0047uF 5% 50V	
C23	1-136-169-00	FILM 0.22uF 5% 50V	
C24	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C25	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C26	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	
C27	1-163-117-00	CERAMIC CHIP 100PF 5% 50V	

MAIN

Ref. No.	Part No.	Description	Remark
C28	1-163-097-00	CERAMIC CHIP 15PF 5% 50V	
C29	1-163-097-00	CERAMIC CHIP 15PF 5% 50V	
C30	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C32	1-163-129-00	CERAMIC CHIP 330PF 5% 50V	(U440RDS/U441RDS)
C33	1-126-162-11	ELECT 3.3uF 20% 50V	
C38	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C39	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C40	1-124-589-11	ELECT 47uF 20% 16V	
C41	1-110-362-11	MYLAR 0.0082uF 5% 50V	
C42	1-124-463-00	ELECT 0.1uF 20% 50V	
C43	1-110-342-11	FILM 390PF 5% 50V	
C44	1-124-464-11	ELECT 0.22uF 20% 50V	
C45	1-124-463-00	ELECT 0.1uF 20% 50V	
C46	1-124-464-11	ELECT 0.22uF 20% 50V	
C48	1-136-161-00	FILM 0.047uF 5% 50V	
C49	1-136-161-00	FILM 0.047uF 5% 50V	
C50	1-126-159-11	ELECT 0.47uF 20% 50V	
C51	1-130-477-00	MYLAR 0.0033uF 5% 50V	
C52	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C53	1-126-288-11	ELECT 4.7uF 20% 16V	
C54	1-163-157-00	FILM 0.022uF 5% 50V	
C55	1-136-155-00	FILM 0.015uF 5% 50V	(U440RDS)
C55	1-136-158-00	FILM 0.027uF 5% 50V	(U220/U330; US, CND)
C56	1-136-155-00	FILM 0.015uF 5% 50V	(U440RDS)
C56	1-136-156-00	FILM 0.018uF 5% 50V	(U330; AEP, E/U330RDS/U331/U441RDS)
C57	1-126-288-11	ELECT 4.7uF 20% 16V	
C58	1-136-171-00	FILM 0.33uF 5% 50V	
C59	1-124-589-11	ELECT 47uF 20% 16V	
C60	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C61	1-124-584-00	ELECT 100uF 20% 10V	
C62	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C63	1-136-161-00	FILM 0.047uF 5% 50V	
C67	1-124-464-11	ELECT 0.22uF 20% 50V	
C68	1-163-135-00	CERAMIC CHIP 560PF 5% 50V	(U440RDS/U441RDS)
C69	1-163-038-00	CERAMIC CHIP 0.1uF 25V	(U440RDS/U441RDS)
C70	1-124-257-00	ELECT 2.2uF 20% 50V	(U440RDS/U441RDS)
C71	1-163-115-00	CERAMIC CHIP 82PF 5% 50V	(U440RDS/U441RDS)
C72	1-163-243-11	CERAMIC CHIP 47PF 5% 50V	(U440RDS/U441RDS)
C73	1-163-038-00	CERAMIC CHIP 0.1uF 25V	(U440RDS/U441RDS)
C75	1-163-038-00	CERAMIC CHIP 0.1uF 25V	(U440RDS/U441RDS)

Ref. No.	Part No.	Description	Remark
C76	1-163-037-11	CERAMIC CHIP 0.022uF 10% 25V	
C77	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C78	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C80	1-126-301-11	ELECT 1uF 20% 50V	(EXCEPT U220)
C81	1-126-301-11	ELECT 1uF 20% 50V	(EXCEPT U220)
C90	1-163-117-00	CERAMIC 100P 5% 50V	
C91	1-163-125-00	CERAMIC 220P 5% 50V	
C101	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C102	1-125-486-11	DOUBLE LAYERS 0.22F 5.5V	
C103	1-163-081-00	CERAMIC CHIP 0.22uF 25V	
C105	1-126-163-11	ELECT 4.7uF 20% 50V	
C106	1-163-081-00	CERAMIC CHIP 0.22uF 25V	
C107	1-126-162-11	ELECT 3.3uF 20% 50V	
C108	1-126-157-11	ELECT 10uF 20% 16V	
C109	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C110	1-124-234-00	ELECT 22uF 20% 16V	
C111	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C112	1-124-229-00	ELECT 33uF 20% 10V	
C113	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C114	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C115	1-164-232-11	CERAMIC CHIP 0.01uF 50V	
C116	1-124-584-00	ELECT 100uF 20% 10V	
C117	1-124-584-00	ELECT 100uF 20% 10V	
C118	1-124-584-00	ELECT 100uF 20% 10V	
C119	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C120	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C199	1-126-157-11	ELECT 10uF 20% 16V	
C201	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C202	1-163-009-11	CERAMIC CHIP 0.001uF 10% 50V	
C203	1-163-229-11	CERAMIC CHIP 12PF 5% 50V	
C204	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C205	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C206	1-163-005-11	CERAMIC CHIP 470PF 10% 50V	
C207	1-163-005-11	CERAMIC CHIP 470PF 10% 50V	
C208	1-163-005-11	CERAMIC CHIP 470PF 10% 50V	
C209	1-128-054-11	ELECT 22uF 20% 10V	
C210	1-163-038-00	CERAMIC CHIP 0.1uF 25V	
C211	1-163-229-11	CERAMIC CHIP 12PF 5% 50V	
C213	1-163-038-00	CERAMIC CHIP 0.1uF 25V	(EXCEPT U220)
C301	1-126-301-11	ELECT 1uF 20% 50V	
C302	1-130-468-00	MYLAR 560PF 5% 50V	
C303	1-124-589-11	ELECT 47uF 20% 16V	
C304	1-136-171-00	FILM 0.033uF 5% 50V	
C305	1-136-161-00	FILM 0.047uF 5% 50V	(EXCEPT U220)
C306	1-126-157-11	ELECT 10uF 20% 16V	
C307	1-126-301-11	ELECT 1uF 20% 50V	
C309	1-126-157-11	ELECT 10uF 20% 16V	
C310	1-126-157-11	ELECT 10uF 20% 16V	

Ref. No.	Part No.	Description			Remark
C311	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V
C312	1-126-159-11	ELECT	0.47uF	20%	50V
C313	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C314	1-126-157-11	ELECT	10uF	20%	16V
C315	1-130-476-00	MYLAR	0.0027uF	5%	50V
C316	1-136-162-00	FILM	0.056uF	5%	50V
C317	1-136-162-00	FILM	0.056uF	5%	50V
C318	1-126-157-11	ELECT	10uF	20%	16V
C321	1-130-477-00	MYLAR	0.0033uF	5%	50V
C322	1-124-584-00	ELECT	100uF	20%	10V
C323	1-124-464-11	ELECT	0.22uF	20%	50V
C324	1-126-157-11	ELECT	10uF	20%	16V
C325	1-126-157-11	ELECT	10uF	20%	16V
C327	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C329	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C330	1-126-288-11	ELECT	4.7uF	20%	16V
C331	1-126-288-11	ELECT	4.7uF	20%	16V
C332	1-124-589-11	ELECT	47uF	20%	16V(U220)
C333	1-163-103-00	CERAMIC CHIP	27PF	5%	50V(U220)
C401	1-126-301-11	ELECT	1uF	20%	50V
C402	1-130-468-00	MYLAR	560PF	5%	50V
C403	1-124-589-11	ELECT	47uF	20%	16V
C404	1-136-171-00	FILM	0.033uF	5%	50V
C405	1-136-161-00	FILM	0.047uF	5%	50V (EXCEPT U220)
C406	1-126-157-11	ELECT	10uF	20%	16V
C407	1-126-301-11	ELECT	1uF	20%	50V
C409	1-126-157-11	ELECT	10uF	20%	16V
C410	1-126-157-11	ELECT	10uF	20%	16V
C411	1-163-037-11	CERAMIC CHIP	0.022uF	10%	25V (EXCEPT U220)
C411	1-163-038-00	CERAMIC CHIP	0.1uF		25V(U220)
C412	1-126-159-11	ELECT	0.47uF	20%	50V
C413	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C414	1-126-157-11	ELECT	10uF	20%	16V
C415	1-130-476-00	MYLAR	0.0027uF	5%	50V
C416	1-136-162-00	FILM	0.056uF	5%	50V
C417	1-136-162-00	FILM	0.056uF	5%	50V
C418	1-126-157-11	ELECT	10uF	20%	16V
C421	1-130-477-00	MYLAR	0.0033uF	5%	50V
C422	1-124-584-00	ELECT	100uF	20%	10V
C423	1-124-464-11	ELECT	0.22uF	20%	50V
C424	1-126-157-11	ELECT	10uF	20%	16V
C425	1-126-157-11	ELECT	10uF	20%	16V
C427	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C429	1-163-103-00	CERAMIC CHIP	27PF	5%	50V
C430	1-126-288-11	ELECT	4.7uF	20%	16V
C431	1-126-288-11	ELECT	4.7uF	20%	16V
C432	1-124-589-11	ELECT	47uF	20%	16V(U220)
C433	1-163-103-00	CERAMIC CHIP	27PF	5%	50V(U220)

Ref. No.	Part No.	Description			Remark
C451	1-126-935-11	ELECT	470uF	20%	16V
C452	1-126-157-11	ELECT	10uF	20%	16V (EXCEPT U220)
C453	1-124-229-00	ELECT	33uF	20%	10V
C454	1-124-584-00	ELECT	100uF	20%	10V (EXCEPT U220)
C454	1-163-038-00	CERAMIC CHIP	0.1uF		25V (U220)
C455	1-126-157-11	ELECT	10uF	20%	16V (EXCEPT U220)
C456	1-131-587-11	TANTALUM	0.68uF	5%	35V (EXCEPT U220)
C457	1-163-081-00	CERAMIC CHIP	0.22uF		25V (EXCEPT U220)
C458	1-126-159-11	ELECT	0.47uF	20%	50V (EXCEPT U220)
C459	1-124-229-00	ELECT	33uF	20%	10V (EXCEPT U220)
C460	1-124-229-00	ELECT	33uF	20%	10V
C461	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C462	1-124-584-00	ELECT	100uF	20%	10V
C463	1-126-159-11	ELECT	0.47uF	20%	50V (EXCEPT U220)
C464	1-126-301-11	ELECT	1uF	20%	50V
C465	1-124-589-11	ELECT	47uF	20%	16V
C466	1-131-587-11	TANTALUM	0.68uF	5%	35V (EXCEPT U220)
C467	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C468	1-124-229-00	ELECT	33uF	20%	10V
C469	1-163-038-00	CERAMIC CHIP	0.1uF		25V
C471	1-163-005-11	CERAMIC CHIP	470PF	10%	50V
C472	1-163-038-00	CERAMIC CHIP	0.1uF		25V

< CONNECTOR >

* CNP10	1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P
* CNP101	1-691-882-21	SOCKET, CONNECTOR 19P
* CNP201	1-573-386-11	CONNECTOR, BOARD TO BOARD 12P
CNP202	1-580-907-11	PLUG, CONNECTOR
* CNP203	1-506-984-11	PIN, CONNECTOR (PC BOARD) 2P
* CNP401	1-506-990-11	PIN, CONNECTOR (PC BOARD) 8P
* CNP402	1-506-989-11	PIN, CONNECTOR (PC BOARD) 7P

< TRIMMER >

CT201	1-141-276-00	CAP, TRIMMER

< DIODE >

D4	8-719-109-84	DIODE	RD5.1ES-B1
D5	8-719-110-17	DIODE	RD10ES-B2
D7	8-719-109-69	DIODE	RD3.6ES-B2
D8	8-719-911-19	DIODE	1SS119
D11	8-719-911-19	DIODE	1SS119 (U220)
D12	8-719-911-19	DIODE	1SS119 (U220)
D101	8-719-109-89	DIODE	RD5.6ES-B2
D102	8-719-911-19	DIODE	1SS119
D103	8-719-911-19	DIODE	1SS119
D104	8-719-911-19	DIODE	1SS119
D105	8-719-110-03	DIODE	RD7.5ES-B2
D106	8-719-911-19	DIODE	1SS119

MAIN

Ref.No.	Part No.	Description	Remark
D107	8-719-110-03	DIODE RD7.5ES-B2	
D108	8-719-911-19	DIODE 1SS119	
D109	8-719-110-14	DIODE RD9.1ES-B3	
D110	8-719-110-14	DIODE RD9.1ES-B3	
D111	8-719-109-89	DIODE RD5.6ES-B2	
D112	8-719-110-22	DIODE RD11ES-B2	
D113	8-719-110-22	DIODE RD11ES-B2	
D114	8-719-109-93	DIODE RD6.2ES-B2	
D115	8-719-911-19	DIODE 1SS119	
D116	8-719-911-19	DIODE 1SS119	
D201	8-719-911-19	DIODE 1SS119	
D202	8-719-911-19	DIODE 1SS119	
D203	8-719-911-19	DIODE 1SS119	
D204	8-719-911-19	DIODE 1SS119	
D205	8-719-911-19	DIODE 1SS119	
D206	8-719-109-93	DIODE RD6.2ES-B2	
D207	8-719-109-93	DIODE RD6.2ES-B2	
D208	8-719-109-93	DIODE RD6.2ES-B2	
D209	8-719-109-93	DIODE RD6.2ES-B2	
D210	8-719-109-93	DIODE RD6.2ES-B2	
D211	8-719-109-93	DIODE RD6.2ES-B2	
D212	8-719-109-93	DIODE RD6.2ES-B2	
D213	8-719-109-93	DIODE RD6.2ES-B2	
D214	8-719-109-93	DIODE RD6.2ES-B2	
D215	8-719-109-93	DIODE RD6.2ES-B2	
D301	8-719-109-75	DIODE RD4.3ES-B2	
D401	8-719-109-75	DIODE RD4.3ES-B2	
D451	8-719-911-19	DIODE 1SS119	
D452	8-719-911-19	DIODE 1SS119 (EXCEPT U220)	
D453	8-719-911-19	DIODE 1SS119	
D454	8-719-109-69	DIODE RD3.6ES-B2	
D455	8-719-911-19	DIODE 1SS119	

< IC >

Ref.No.	Part No.	Description	Remark
IC20	8-759-823-81	IC LC7216M	
IC30	8-759-508-66	IC XRA10358F	
IC40	8-759-070-45	IC AN7464S	
IC50	8-759-065-98	IC SAA6579T (U440RDS/U441RDS)	
IC60	8-759-823-84	IC LC7071NM (U440RDS/U441RDS)	
IC101	8-759-940-45	IC S-8054HN-CB	
IC201	8-759-082-40	IC uPD75518GF-047-3B9	
IC202	8-759-513-44	IC X24C16SI (U330; US, CND, E/U440RDS/U441RDS)	
IC204	8-759-998-92	IC LM393D	
IC301	8-759-046-31	IC BA328F	
IC302	8-752-032-14	IC CXA1102M (EXCEPT U220)	
IC302	8-759-996-43	IC RC4558PS (U220)	
IC303	8-759-066-00	IC LA2000M (EXCEPT U220)	
IC304	8-759-106-22	IC uPD4052BG	
IC305	8-759-820-15	IC LC7537AN	
IC310	8-759-996-43	IC RC4558PS	
IC311	8-759-996-43	IC RC4558PS	
IC312	8-759-996-43	IC RC4558PS	
IC410	8-759-996-43	IC RC4558PS	
IC411	8-759-996-43	IC RC4558PS	
IC412	8-759-996-43	IC RC4558PS	

< COIL >

Ref.No.	Part No.	Description	Remark
L1	1-410-509-11	INDUCTOR 10uH	
L2	1-410-509-11	INDUCTOR 10uH	
L4	1-410-509-11	INDUCTOR 10uH	
L6	1-410-509-11	INDUCTOR 10uH (U440RDS/U441RDS)	
L201	1-410-509-11	INDUCTOR 10uH	

< TRANSISTOR >

Ref.No.	Part No.	Description	Remark
Q2	8-729-424-08	TRANSISTOR UN2111	
Q2	8-729-901-04	TRANSISTOR DTA114EK	
Q3	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q7	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q8	8-729-809-71	TRANSISTOR 2SK536	
Q9	8-729-421-22	TRANSISTOR UN2211 (U331/U441RDS)	
Q10	8-729-011-95	TRANSISTOR RN-2426	
Q11	8-729-011-96	TRANSISTOR RN-2426	
Q12	8-729-901-01	TRANSISTOR DTC144EK	
Q102	8-729-106-68	TRANSISTOR 2SD1615A-GP	
Q103	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q104	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q105	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q106	8-729-822-84	TRANSISTOR 2SB1202FAST	
Q107	8-729-421-22	TRANSISTOR UN2211	
Q108	8-729-822-84	TRANSISTOR 2SB1202FAST	
Q109	8-729-421-22	TRANSISTOR UN2211	
Q110	8-729-106-60	TRANSISTOR 2SB1115A	
Q111	8-729-421-22	TRANSISTOR UN2211	
Q112	8-729-807-12	TRANSISTOR 2SD1802S	
Q113	8-729-807-12	TRANSISTOR 2SD1802S	
Q114	8-729-106-68	TRANSISTOR 2SD1615A-GP	
Q115	8-729-424-08	TRANSISTOR UN2111	
Q116	8-729-421-22	TRANSISTOR UN2211	
Q117	8-729-807-12	TRANSISTOR 2SD1802S	
Q118	8-729-807-12	TRANSISTOR 2SD1802S	
Q201	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q202	8-729-216-22	TRANSISTOR 2SA1162-G	
Q204	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q205	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q206	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q207	8-729-230-49	TRANSISTOR 2SC2712-YG	
Q208	8-729-230-49	TRANSISTOR 2SC2712-YG	

Ref. No.	Part No.	Description	Remark
Q209	8-729-216-22	TRANSISTOR 2SA1162-G	
Q210	8-729-421-22	TRANSISTOR UN2211	
Q211	8-729-424-08	TRANSISTOR UN2111	
Q212	8-729-421-22	TRANSISTOR UN2211	
Q301	8-729-421-22	TRANSISTOR UN2211	(EXCEPT U220)
Q401	8-729-421-22	TRANSISTOR UN2211	(EXCEPT U220)
Q451	8-729-106-60	TRANSISTOR 2SB1115A	
Q452	8-729-421-22	TRANSISTOR UN2211	
Q453	8-729-230-49	TRANSISTOR 2SC2712-G	(EXCEPT U220)
Q454	8-729-106-68	TRANSISTOR 2SD1615A-GP	(EXCEPT U220)
Q455	8-729-424-08	TRANSISTOR UN2111	
Q456	8-729-421-22	TRANSISTOR UN2211	
Q457	8-729-901-04	TRANSISTOR DTA114EK	(U220)
Q458	8-729-901-01	TRANSISTOR DTC114EK	(U220)
		< RESISTOR >	
R4	1-216-041-00	METAL CHIP 470 5% 1/10W	
R5	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R6	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R7	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R8	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R9	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R23	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R24	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R25	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R26	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R27	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	
R30	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R31	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R32	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R33	1-216-001-00	METAL CHIP 10 5% 1/10W	
R34	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R35	1-216-103-00	METAL CHIP 180K 5% 1/10W	
R36	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R37	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R38	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R39	1-216-075-00	METAL CHIP 12K 5% 1/10W	
R40	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	
R41	1-216-113-00	METAL CHIP 470K 5% 1/10W	
R42	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R43	1-216-092-00	METAL GLAZE 62K 5% 1/10W	
R44	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R46	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R47	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R50	1-216-097-00	METAL CHIP 100K 5% 1/10W	(EXCEPT U220/U330; US, CND)
R50	1-216-101-00	METAL CHIP 150K 5% 1/10W	(U330; US, CND)
R50	1-216-240-00	METAL CHIP 56K 5% 1/10W	(U220)
R51	1-216-097-00	METAL CHIP 100K 5% 1/10W	(EXCEPT U220/U330; US, CND)
R51	1-216-101-00	METAL CHIP 150K 5% 1/10W	(U330; US, CND)
R51	1-216-240-00	METAL CHIP 56K 5% 1/10W	(U220)
R53	1-216-097-00	METAL CHIP 100K 5% 1/10W	(U440RDS/U441RDS)
R54	1-216-097-00	METAL CHIP 100K 5% 1/10W	(U440RDS/U441RDS)
R55	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	(U440RDS/U441RDS)
R56	1-216-001-00	METAL CHIP 10 5% 1/10W	(U440RDS/U441RDS)
R57	1-216-073-00	METAL CHIP 10K 5% 1/10W	(EXCEPT U220)
R57	1-216-252-00	METAL CHIP 180K 5% 1/10W	(U220)
R58	1-216-073-00	METAL CHIP 10K 5% 1/10W	(EXCEPT U220)
R58	1-216-252-00	METAL CHIP 180K 5% 1/10W	(U220)
R61	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	(U331/U441RDS)
R62	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R63	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R70	1-216-092-00	METAL CHIP 62K 5% 1/10W	(EXCEPT U330; US, CND)
R70	1-216-099-00	METAL CHIP 120K 5% 1/10W	(U330; US, CND)
R80	1-216-092-00	METAL CHIP 62K 5% 1/10W	(EXCEPT U330; US, CND)
R80	1-216-099-00	METAL CHIP 120K 5% 1/10W	(U330; US, CND)
R101	1-216-017-00	METAL CHIP 47 5% 1/10W	
R102	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R105	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R106	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R107	1-216-091-00	METAL CHIP 56K 5% 1/10W	
R108	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R109	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R110	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R111	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R112	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R113	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R114	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R115	1-216-083-00	METAL CHIP 27K 5% 1/10W	
R116	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R117	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R118	1-220-150-11	METAL GLAZE 680 10% 1/2W	
R119	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R120	1-220-150-11	METAL GLAZE 680 10% 1/2W	
R121	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R122	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	
R123	1-216-041-00	METAL CHIP 470 5% 1/10W	
R124	1-216-041-00	METAL CHIP 470 5% 1/10W	
R125	1-216-041-00	METAL CHIP 470 5% 1/10W	
R126	1-216-049-00	METAL CHIP 1K 5% 1/10W	

MAIN

Ref. No.	Part No.	Description	Remark
R127	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R129	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R130	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R131	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R201	1-216-097-00	METAL CHIP 100K 5% 1/10W	(EXCEPT U440RDS/U441RDS)
R202	1-216-097-00	METAL CHIP 100K 5% 1/10W	(EXCEPT U440RDS/U441RDS)
R203	1-216-097-00	METAL CHIP 100K 5% 1/10W	(EXCEPT U440RDS/U441RDS)
R204	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R205	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R206	1-216-085-00	METAL CHIP 33K 5% 1/10W	(U220/U330; US, CND, E/U331/U441RDS)
R207	1-216-085-00	METAL CHIP 33K 5% 1/10W	(U330; AEP/U330RDS/U440RDS)
R207	1-216-097-00	METAL CHIP 100K 5% 1/10W	(U220/U330; US, CND)
R208	1-216-085-00	METAL CHIP 33K 5% 1/10W	(U440RDS/U441RDS)
R208	1-216-097-00	METAL CHIP 100K 5% 1/10W	(U330; E)
R209	1-216-085-00	METAL CHIP 33K 5% 1/10W	(U220/U330; US, CND, AEP/U331)
R209	1-216-097-00	METAL CHIP 100K 5% 1/10W	(U330; E)
R210	1-216-109-00	METAL CHIP 330K 5% 1/10W	
R211	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R212	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R213	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R214	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R215	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R216	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R218	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R219	1-216-675-11	METAL CHIP 10K 0.5% 1/10W	
R220	1-216-025-00	METAL CHIP 100 5% 1/10W	
R221	1-216-025-00	METAL CHIP 100 5% 1/10W	
R222	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R223	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R224	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R225	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R226	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R227	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R228	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R229	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R230	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R231	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R232	1-216-063-00	METAL CHIP 3.9K 5% 1/10W	
R233	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R234	1-216-081-00	METAL CHIP 22K 5% 1/10W	
R235	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R236	1-216-089-00	METAL CHIP 47K 5% 1/10W	

Ref. No.	Part No.	Description	Remark
R237	1-216-174-00	METAL GLAZE 100 5% 1/8W	
R238	1-216-174-00	METAL GLAZE 100 5% 1/8W	
R239	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R240	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R241	1-216-089-00	METAL CHIP 47K 5% 1/10W	(U330; US, CND, E/U440RDS/U441RDS)
R242	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R243	1-216-089-00	METAL CHIP 47K 5% 1/10W	(U220/U330; AEP/U331)
R244	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R245	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R246	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R248	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R249	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R250	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R251	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R252	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R253	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R254	1-216-089-00	METAL CHIP 47K 5% 1/10W	(U330; US, CND, E/U440RDS; E/U441RDS)
R255	1-216-089-00	METAL CHIP 47K 5% 1/10W	(U220/U330; AEP/U331/U440RDS; G)
R256	1-216-089-00	METAL CHIP 47K 5% 1/10W	(U220)
R257	1-216-089-00	METAL CHIP 47K 5% 1/10W	
R258	1-216-089-00	METAL CHIP 47K 5% 1/10W	(U220/U330/U331)
R259	1-216-089-00	METAL CHIP 47K 5% 1/10W	(U440RDS/U441RDS)
R270	1-216-294-00	METAL CHIP 10M 5% 1/8W	
R301	1-216-027-00	METAL CHIP 120 5% 1/10W	(U220)
R302	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R303	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R304	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R305	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	(EXCEPT U220)
R306	1-216-117-00	METAL CHIP 680K 5% 1/10W	(EXCEPT U220)
R307	1-216-101-00	METAL CHIP 150K 5% 1/10W	(EXCEPT U220)
R308	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R309	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R311	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R312	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R313	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R314	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R315	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R316	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R317	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R318	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R319	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R320	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R321	1-216-049-00	METAL CHIP 1K 5% 1/10W	

Ref. No.	Part No.	Description	Remark
R322	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R323	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R324	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R325	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R328	1-216-089-00	METAL CHIP 47K 5% 1/10W	(U220)
R329	1-216-089-00	METAL CHIP 47K 5% 1/10W	(U220)
R330	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	(U220)
R331	1-216-085-00	METAL CHIP 33K 5% 1/10W	(U220)
R401	1-216-027-00	METAL CHIP 120 5% 1/10W	(U220)
R402	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R403	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R404	1-216-051-00	METAL CHIP 1.2K 5% 1/10W	
R405	1-216-053-00	METAL CHIP 1.5K 5% 1/10W	(EXCEPT U220)
R406	1-216-117-00	METAL CHIP 680K 5% 1/10W	(EXCEPT U220)
R407	1-216-101-00	METAL CHIP 150K 5% 1/10W	(EXCEPT U220)
R408	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R409	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R411	1-216-073-00	METAL CHIP 10K 5% 1/10W	(U220)
R411	1-216-097-00	METAL CHIP 100K 5% 1/10W	(EXCEPT U220)
R412	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R413	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R414	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R415	1-216-073-00	METAL CHIP 10K 5% 1/10W	
R416	1-216-061-00	METAL CHIP 3.3K 5% 1/10W	
R417	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R418	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R419	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R420	1-216-121-00	METAL CHIP 1M 5% 1/10W	
R421	1-216-049-00	METAL CHIP 1K 5% 1/10W	
R422	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R423	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R424	1-216-077-00	METAL CHIP 15K 5% 1/10W	
R425	1-216-085-00	METAL CHIP 33K 5% 1/10W	
R428	1-216-089-00	METAL CHIP 47K 5% 1/10W	(U220)
R429	1-216-089-00	METAL CHIP 47K 5% 1/10W	(U220)
R430	1-216-059-00	METAL CHIP 2.7K 5% 1/10W	(U220)
R441	1-216-085-00	METAL CHIP 33K 5% 1/10W	(U220)
R451	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R452	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R453	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R454	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R455	1-216-065-00	METAL CHIP 4.7K 5% 1/10W	
R456	1-216-073-00	METAL CHIP 10K 5% 1/10W	(EXCEPT U220)
R457	1-216-001-00	METAL CHIP 10 5% 1/10W	
R458	1-216-073-00	METAL CHIP 10K 5% 1/10W	(EXCEPT U220)
R459	1-216-690-11	METAL CHIP 43K 0.5% 1/10W	(EXCEPT U220)
R460	1-216-073-00	METAL CHIP 10K 5% 1/10W	(EXCEPT U220)
R461	1-216-073-00	METAL CHIP 10K 5% 1/10W	(EXCEPT U220)
R462	1-216-069-00	METAL CHIP 6.8K 5% 1/10W	(EXCEPT U220)

Ref. No.	Part No.	Description	Remark
R463	1-216-109-00	METAL CHIP 330K 5% 1/10W	(EXCEPT U220)
R464	1-216-025-00	METAL CHIP 100 5% 1/10W	(EXCEPT U220)
R465	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R466	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R467	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R468	1-216-025-00	METAL CHIP 100 5% 1/10W	
R469	1-216-097-00	METAL CHIP 100K 5% 1/10W	
R470	1-216-073-00	METAL CHIP 10K 5% 1/10W	(EXCEPT U220)
R471	1-216-049-00	METAL CHIP 1K 5% 1/10W	(EXCEPT U220)
R472	1-216-057-00	METAL CHIP 2.2K 5% 1/10W	
R474	1-216-134-00	METAL CHIP 2.2 5% 1/8W	

< VARIABLE RESISTOR >

Ref. No.	Part No.	Description	Remark
RV2	1-238-604-11	RES, ADJ, CARBON 220K	
RV3	1-238-600-11	RES, ADJ, CARBON 10K	
RV4	1-238-598-11	RES, ADJ, CARBON 2.2K	
RV6	1-238-603-11	RES, ADJ, CARBON 100K	
RV9	1-238-604-11	RES, ADJ, CARBON 220K	
RV301	1-238-596-11	RES, ADJ, CARBON 470	(EXCEPT U220)
RV401	1-238-596-11	RES, ADJ, CARBON 470	(EXCEPT U220)

< SWITCH >

Ref. No.	Part No.	Description	Remark
S201	1-572-272-11	SWITCH, SLIDE (POWER SELECT)	
S202	1-572-272-11	SWITCH, SLIDE (9K/10K)	(E)

< TUNER >

Ref. No.	Part No.	Description	Remark
TU10	1-465-405-11	TUNER UNIT (FM/AM)	(U220/U330)
TU10	1-465-537-11	TUNER UNIT (FM/MW/LW)	(U331)
TU10	1-693-045-11	TUNER UNIT (FM/AM)	(U440RDS)
TU10	1-693-046-11	TUNER UNIT (FM/MW/LW)	(U441RDS)

< VIBRATOR >

Ref. No.	Part No.	Description	Remark
X1	1-567-848-11	VIBRATOR, CRYSTAL	
X2	1-567-819-11	VIBRATOR, CERAMIC (4MHz)	(U440RDS/U441RDS)
X3	1-579-242-11	VIBRATOR, CRYSTAL (4.332MHz)	(U440RDS/U441RDS)
X201	1-567-776-21	VIBRATOR, CERAMIC (6MHz)	
X202	1-579-532-11	VIBLATOR, CRYSTAL (32.768MHz)	

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3-375-376-01 MUTE BOARD

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< SWITCH >

Ref. No.	Part No.	Description	Remark
S101	1-692-065-11	SWITCH, LEAF (FF/REW)	

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RESET SWITCH

Ref. No.	Part No.	Description	Remark
*	1-643-119-11	RESET BOARD (U330/U331) ************************	
*	1-643-674-11	RESET BOARD (U440RDS/U441RDS) ******************************	
*	1-643-678-11	RESET BOARD (U220) *******************	
		< CONNECTOR >	
* CNP210	1-573-387-11	CONNECTOR, BOARD TO BOARD 12P	
* CNP211	1-691-558-11	SOCKET, CONNECTOR 12P	
		< SWITCH >	
S210	1-572-474-11	SWITCH, TACTIL	

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Ref. No.	Part No.	Description	Remark
*	3-397-444-01	SWITCH BOARD *************	
		< SWITCH >	
S103	1-572-353-11	SWITCH, SLIDE (N/R)	

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MISCELLANEOUS
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Ref. No.	Part No.	Description	Remark
5	1-574-339-11	CORD (WITH CONNECTOR)	
6	1-690-742-11	CORD (WITH CONNECTOR)	
* 17	1-563-470-11	HOUSING, CONNECTOR 2P	
F1	1-532-414-11	FUSE, GLASS TUBE 1A	
F2	1-532-678-11	FUSE, GLASS TUBE 12A	
HP101	1-543-717-11	HEAD, MAGNETIC (PLAYBACK)	
LCD701	1-809-595-11	DISPLAY PANEL, LIQUID CRYSTAL (U330RDS/U440RDS/U441RDS)	
LCD701	1-809-595-21	DISPLAY PANEL, LIQUID CRYSTAL (U220/U330/U331)	
M101	X-3365-046-1	MOTOR ASSY (CAPSTAN/REEL)	
PL101	1-454-517-11		
PL102	1-454-464-12	SOLENOID, PLUNGER (EXCEPT U220)	
S102	1-554-790-21	SWITCH, POWER (PACK IN)	
S901	1-570-771-11	SWITCH	

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ACCESSORIES & PACKING MATERIALS
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Ref. No.	Part No.	Description	Remark
	1-690-741-11	CORD (WITH CONNECTOR) (U330; US, CND)	
	1-690-844-11	CORD (WITH CONNECTOR) (U220)	
	1-690-845-11	CORD (WITH CONNECTOR) (U330; AEP/U331/U440RDS; G)	
*	3-355-207-01	CARDBOARD (E)	
*	3-378-737-01	CUSHION (UPPER)	
*	3-378-738-01	CUSHION (LOWER)	
*	3-379-110-01	INDIVIDUAL CARTON (U220)	
*	3-379-112-01	INDIVIDUAL CARTON (U440RDS)	
*	3-379-114-01	INDIVIDUAL CARTON (U441RDS)	
*	3-379-151-01	INDIVIDUAL CARTON (U330; AEP, E)	
*	3-379-340-01	INDIVIDUAL CARTON (U331)	
*	3-379-401-01	INDIVIDUAL CARTON (U330; US, CND)	
*	3-379-855-01	CUSHION (M)	
	3-754-966-11	MANUAL, INSTRUCTION (U440RDS/U441RDS)	
	3-754-966-41	MANUAL, INSTRUCTION (U440RDS; AEP)	
	3-754-967-11	MANUAL, INSTRUCTION, INSTALL (U440RDS; AEP/U441RDS)	
	3-754-967-41	MANUAL, INSTRUCTION, INSTALL (U440RDS; AEP)	
	3-754-967-61	MANUAL, INSTRUCTION, INSTALL(U440RDS; G)	
	3-754-968-11	MANUAL, INSTRUCTION (U330; AEP, E/U331)	
	3-754-968-21	MANUAL, INSTRUCTION (U220/U330; US, CND)	
	3-754-968-41	MANUAL, INSTRUCTION (U330; AEP)	
	3-754-969-11	MANUAL, INSTRUCTION, INSTALL (U330; AEP, E/U331)	
	3-754-969-21	MANUAL, INSTRUCTION, INSTALL (U220)	
	3-754-969-31	MANUAL, INSTRUCTION, INSTALL (U330; US, CND)	
	3-754-969-41	MANUAL, INSTRUCTION, INSTALL (U330; AEP)	
	3-755-365-11	INSTRUCTION	
	X-3364-977-1	CASE ASSY (FOR FRONT PANEL ASSEMBLY)	

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